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FARM AND FIRESIDE

EVERY OTHER WEEK THE NATIONAL FARM PAPER

ESTABLISHED 1877

SATURDAY, MARCH 29, 1913



THE EDITOR'S BILLBOARD OF COMING ATTRACTIONS

WITH THE EDITOR

ADVERTISEMENTS ALL ADVERTISERS GUARANTEED

Cater Design

The cover design of the April 12th number has to do with aviation, and tells what the birdmen sometimes encounter on their cross-country flights.

Special Articles

"Horse Sense in Hog-Raising," which will appear shortly, is descriptive of an unusually well-organized hog-farm where the live animals are handled as systematically as are their carcasses in the most up-to-date packing-houses. There will also be a complete discussion of the culture of sweet clover, which is the twin of alfalfa and a half-brother to the common clovers.

The Headwork Shop

Again we extend our invitation for 1913 ideas of Headwork Shop caliber. If you have a simple labor-saving and time-shortening device, describe it and sketch it as clearly as you can, and the editors will do the rest.

Garden and Orchard

Hubbard-squash growing, as told by a squash expert, will be presented in an early issue. This expert, whose squash crop has never failed, tells how six hundred pounds of Hubbards can be grown on a garden plot 35x125 feet. "At What Age Should Trees be Set" is a subject that nurserymen have been arguing about for some years. Mr. O. M. Taylor solves this problem in an impartial manner.

Poultry

"Facts Worth Knowing About Geese" are the observations of a writer who claims that goose eggs, feathers and flesh are now selling at prices good enough to warrant a few thousand more poultrymen going into goose culture.

Crops and Soils

"Planting Trees with Dynamite" gives the practical experiences of a farmer who has used this explosive for digging holes for trees and loosening the subsoil. There will also be timely articles on crop pests and how to fight them.

Live Stock and Dairy

Mr. Ross contributes a discussion entitled "What Amateur Horse-Breeders Should Know," which gives horse information that every farmer can understand and apply.

Farm Notes

The irksome task of handling manure is nicely solved in an article by Mr. Wendt entitled "Let the Track Save Your Back," being a description of a home-made manure-carrier with many advantages and no drawbacks.

Sunday Reading

The Sunday-school lessons will be explained and commented on as usual, and there will be interesting special articles of religious nature for your Sunday afternoon reading.

Needlework

An odd and attractive luncheon-set of linen and crochet will delight all women who crochet—and what women does not? Illustrations and full directions will be given.

Fashions

Just what you have been wanting, but not expecting—a page of the prettiest of the new waists. Miss Gould also shows us some of the new materials for morning and afternoon dresses, and tells all about them.

Recipes

A good many of the best old ways, and some new ones too, in which the homely but useful potato may be prepared and served so as to tempt the appetite.

Points Young Pitchers

The baseball season is nearly here, and we are preparing for it with an article which will tell the boys just how to throw curves that mean three strikes and you're out.

What Two Women Did

You will want to read how two women capitalized their knowledge of practical cookery. It is intensely interesting—and practical, and it may help to solve some of your problems.

A very romantic episode took place on a Kentucky farm last summer. It was nothing more nor less than an elopement. The lady in the case belonged to one of the oldest families in America. While not a "lady of color" in the ordinary sense, she is descended from a very well-known race originally found in West Africa.

The gentleman is an aristocrat. His descent is remotely from denizens of the highlands of India, but in more recent ages from an Italian branch of the family. He is very proud, as are all his relatives, very handsome, pugnacious and even quarrelsome, an elegant fellow in dress and manner, being very fond of red neckwear, but so exquisite in apparel that the brilliancy of his clothing gives one no feeling that his taste is vulgar. In fact, he is a good type of the high-class Kentucky gentleman.

The lady in the case is, on the contrary, modest and drooping in manner, though very active; and while her voice—her one lack of perfect ladyhood—is a little harsh, she is timid and retiring to a fault. She likes a home nest as far from the haunts of men as possible, and her friends are sometimes vexed at her habit of "hiding her nest"—as they jokingly term it—in some remote nook of the woods or fields, out of sight and almost past all finding.

They Were Just Fowls

I think this is an inherited tendency derived from her ancestors in the forests of Africa; but her husband, though a descendant of jungle people in India, is devoid of any modesty, and flaunts his presence before the eyes of all men, in striking contrast to her drab modesty. He is like a swash-buckling knight of old, swaggering about looking for almost any sort of trouble, while she makes one think of a New England maiden lady, clad in a drab-and-white shawl, keeping out of sight, devoted to the hidden nest, and just a little trying when she attempts to sing.

These twain, so different in social standing and descent, eloped! He a bright red Single-Comb Brown Leghorn Cockerel, and she a shy little Pearl Guinea Hen! They not only fell in love and eloped, but they proceeded to rear a family. Like most American families, it is not yet numerous, consisting of a single hybrid bird of indeterminate sex, and of characteristics midway between the parents.

Markings of the Hybrid

Have any of you ever heard of the crossing of the guinea fowl and the ordinary *Gallus domesticus*, or common chicken? Nobody about the office of FARM AND FIRESIDE has ever known of such a thing until now; and when we heard of the case through a correspondent, we proceeded to acquire the trio—Papa S. C. B. Leghorn, Mama Pearl Guinea and Offspring What-is-it.

If we succeed in propagating a new kind of fowl, we think of calling them the "Efaneffs," in honor of F. & F., the National Farm Paper.

This hybrid is about half-way in size between the cock and the guinea hen. Its plumage is beautifully penciled like its mother's; but, instead of being white and drab, it is of two shades of brown. It has these colors distributed in almost exactly the same way as the white and drab of the guinea hen—even to the large white spots on the breast. Its tail is not quite so drooping as that of the guinea, but is for all that in marked contrast to the erectly carried tail of the brown leghorn.

Its head would pass for that of a common pullet, though its beak is a little more hooked. The illustrations on the cover are remarkably accurate pictures of the family.

Probably a Hen

A remarkable thing about this really beautiful bird is that although the cock has the immense comb and wattles of the leghorn, and the hen the pronounced wattles, quite of another sort, of the guinea fowl, the offspring has no sign of wattles or other head decorations as yet.

We are going to keep this happy family together, and see if we can carry the experiment further. The voluntary mating of these birds under ordinary farm conditions is very remarkable. We rather expect to hatch more hybrids this summer; but the really interesting phase of the affair will come when the test of the offspring as to fertility is made. We cannot say as yet whether it is a male or a female, but we rather incline to the belief that it is a hen. It slightly resembles a female hen-hawk. Its voice is about midway between the characteristic notes made by a hen and a guinea fowl and its manner and style of carriage are sufficiently in contrast to the corresponding qualities of Papa Brown Leghorn to be considered feminine.

Well, What of It?

If so, will it lay? If it lays, will it follow the law of fecundity of which Dr. Raymond Pearl tells us, and lay according to the rule prevailing in its father's family, or will it confine itself to fifty or sixty eggs as does its mother's people? Will its eggs be fertile, or will they refuse to hatch as do those of most hybrids? The Indian jungle fowl is a much closer relative to the common chicken than is the guinea, and readily crosses with the domestic fowl, but the hybrids are usually infertile, like the mule.

What's the use of it all? Well, what's the use of any fact? The first man who crossed the ass and horse and reared the mule may have been asked the same question. The "Efaneff" may not be useful, and again it may. Anyhow, every bit of light which we can throw on the great subject of breeding is sure to be found useful by someone, some day.

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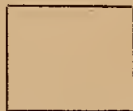
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The death of Carl Gustaf Patrick De Laval on February 3d in Stockholm, Sweden, his native city, marks the end of the first generation of dairy invention. The centrifugal separator and the Babcock test are so familiar that we are likely to forget that they are scarcely a generation old.

In addition to being the pioneer in the development of the centrifugal cream-separator, Doctor De Laval has handed down to posterity an explosion-proof steam-boiler, a process for extracting metals from ore by magnetism, a centrifugal churn, a milk tester and a mechanical cow-milker.

Losing Money on Bumper Crops

A SERIES of interesting fertilizer experiments have just been completed by J. W. Lloyd of the Illinois Experiment Station. Among his findings the following results stand out prominently.

(1) Manuring in the hill proves superior to broadcast manuring, except where a very large amount of manure was broadcasted.

(2) Although from four and one-half to twelve tons of manure per acre gave the best crop results, from two and one-quarter to three tons per acre, carefully applied to the hills, produced a greater net profit.

(3) Raw rock phosphate in moderate amounts increased the yield of early melons, the total yield and the net profit. Perfectly balanced fertilizers produced very large crops, but were so expensive that the value of the crop would not justify their purchase.

The results bring out a point which, though most important, is too often overlooked. The most profitable crop is not necessarily the biggest crop, but rather the one which shows the greatest balance of profit when the cost of raising it is deducted from the proceeds of the sales.

Make the Most of Machinery

THE secret of getting profitable returns from expensive machinery is to keep the wheels turning steadily doing work that will furnish the maximum of benefit to those employing the equipment.

Our state and national departments of agriculture and experiment stations were instituted for taking care of the myriad problems of farmers. The grist going through the hoppers has increased to enormous proportions. In fact, so congested are the hoppers there is serious danger that the milling must suffer in consequence.

Of late years there has developed quite a pronounced feeling among farmers and some students of agriculture that altogether too much attention is being given to increasing farm products while practically nothing is being done in an organized way to assist in the distribution and disposal of farm products.

The question arises, why cannot this machinery of our state agricultural institutions be made use of in part to inaugurate an efficient system of distribution and disposal of farm products?

Should the work now being done by the stations and Department of Agriculture be brought to the farmers by means of agents and demonstration farms in the counties, and could not the volume of work in the state institutions of agriculture be so lessened as to enable aid to be given to assist in the distribution and marketing of farm products?

This seems to be the logical means of bringing the producer and consumer closer together. Associations of farmers could be formed for the sale and distribution of products and purchase of supplies through the systematic work of the state agricultural institutions much more effectively than where different communities are working at cross-purposes. There seems to be no good reason why our state agricultural machinery cannot be called on to enlarge this service and assist in the distribution of farm crops which now go to waste.

Besting the Mites at Last

THE fight of generations of poultrymen against external poultry parasites seems about to be won if the claims of "Mapes, the Hen Man," prove to be borne out. Mr. O. W. Mapes is a poultryman of many years' experience whose operations have been conducted on a considerable scale and with a good degree of success. His unique ideas for housing and handling poultry have become known to poultrymen in many sections of the country, and for that reason his recent utterances on the complete control of external poultry parasites deserve to have full and fair consideration.

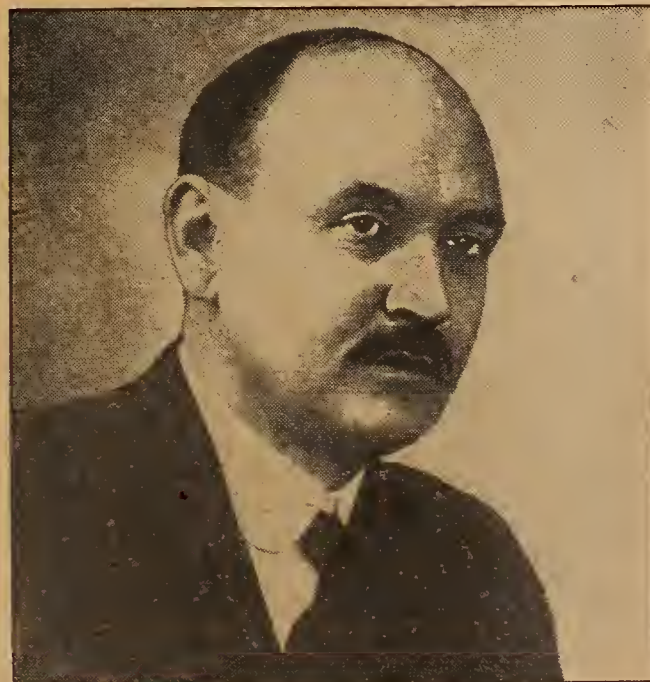
Mr. Mapes now affirms that the long-continued fussing and fighting to keep poultry free from blood-sucking insects is needless; the only treatment necessary is to paint the perches once a year with beef or mutton tallow, covering top, bottom, sides, ends and roost supports with the melted tallow, leaving no space, crack or crevice untreated. This is absolutely all that is required to win the fight except to compel every bird to roost on the greased perches. Simple! Easy? Yes. The mite or other blood-sucker that gets a smear of grease gets a dose that ends his career.

We have contended against these minute foes that cause an aggregate loss of millions of dollars annually to the poultry industry long enough. Is Mr. Mapes to be the deliverer?

James Wilson—David F. Houston

JAMES WILSON, Secretary of Agriculture for the past sixteen years, has broken all cabinet records for tenure of office. Mr. Wilson has proved Doctor Wiley's assertion that man's usefulness does not end when threescore years have accumulated over his head. He began his cabinet career at the age of sixty-one, and is now seventy-seven years of age. His achievements have been brilliant, notwithstanding a few obvious mistakes and the slurs of his critics.

His successor is David F. Houston, who comes to the cabinet from Washington University, St. Louis,



David F. Houston, Secretary of Agriculture since March 5, 1913

Missouri, where he has been chancellor since September 24, 1908. Mr. Houston was born February 17, 1866, in Monroe, North Carolina. He is a scholarly man and an authority on political science. From 1902 to 1905 he was president of the Agricultural and Mechanical College of Texas.

Mr. Houston's appointment comes as a surprise to the country generally, and especially to aspirants and candidates for the nation's highest agricultural position. Mr. Houston was not an office-seeker.

A German scientist has examined large quantities of butter for the presence of bacteria causing tuberculosis. None of the samples of butter made on farms contained tubercle bacilli, whereas 15.6 per cent. of the samples of creamery butter contained these germs. The author maintains that all such milk should be Pasteurized to prevent the contamination of the entire mixture by one lot.

According to a cablegram from the International Institute of Agriculture in Rome, Italy, the total production of wheat in Argentina, Australia and New Zealand this season is 321,000,000 bushels, or 130.7 per cent. of the production in those countries last season. The growing season in those countries is our winter.

Supply and Demand—The Farmer's Best Law

WOULD it not be fine if we could have a good old-fashioned free-for-all debate on the rush-to-the-city problem some of these days? Somehow most of the arguments about expensive living don't seem to rest on the whole foundation, but rather just on a part of it. It must be because we have more faith in the law of supply and demand than most folks. Thank goodness, it can't be amended or repealed, for it's about the best law the farmer has. It will work as long as the law of gravitation, and it's as true as the laws of mathematics. In fact, it is mathematics, because it deals entirely with numbers.

Anybody who is trying to prove that more people ought to live on farms will take great delight in these figures reported by the Bureau of Statistics of the United States Department of Agriculture. Of all persons ten years old and over employed in gainful occupations the following percentages were employed in agriculture from 1820 to 1900: 1820, 83.1; 1840, 77.5; 1880, 43.3; 1900, 35.3.

At this rate it looks as if in about the year 1950 no one will be left to run our farms. The daily papers haven't got hold of these figures yet, but if they do, don't become alarmed.

The figures above are only percentages, and percentages are more misleading in the wrong hands than any class of figures I know of. The total number of persons over ten years old and engaged in agriculture was just a little more than two million in 1820, as compared with over ten million in 1910. There are over five times as many people tilling the soil now as in 1820, and one man now can do the work of three in the olden days when weary human muscle had to do what horseflesh and gasoline do more effectively now.

We look at the situation this way. No human being can change the law of supply and demand, and nobody can tamper with it very long without being found out and punished.

If people want to go to the city, they must pay the city prices which the law of supply and demand dictates. If they decide to stay on the farm, they have the benefit of these prices. The rule works both ways and all the time. People are affected by what other people say or do or think, but the law of supply and demand is impersonal, infallible and universal.

If people comply with the law, they prosper; if they violate it ignorantly, schemingly, or in any way, they suffer. Therefore, we ought to study it and try to understand it better than we do.

A New Breed of Dairy Cattle

A NEW breed of dairy cattle known as the Illawarra breed has been developed in New South Wales. It was obtained by crossing shorthorns, longhorns, Devons and Ayrshires. This new breed of cattle has become a favorite for dairying in the Illawarra district, New South Wales, though it is hardly known in America.



A well-formed tree except for the objectionable lower crotch which will ultimately split

The branches, though properly pruned, are too high and the fruit will be hard to pick

The branches should be more widely distributed on the trunk to induce best growth

Crotches should be avoided, as they ultimately cause splitting or a one-sided development

A one-sided growth is always unsatisfactory especially if the growth is toward the south

Unpruned when planted. Note the spindling growth and absence of lateral branches

Too many branches arrest the best development of the newly set tree by sapping its vigor

The crotches are too close together, and the head is too high. This could have been prevented

The Art of Proper Pruning

Some Things That Distinguish the Tree Surgeon from the Tree Butcher

By O. M. Taylor

THE pruning of fruit-trees would be a simple operation could all trees be treated according to a uniform plan or set of rules. Such a plan fails because the different fruits vary in habit of growth, and trees of the same variety differ in their development under similar as well as different conditions. There are no two trees identical in all respects. The pruning then to be well done should be of such a nature as to meet the needs of each individual tree.

The Knowledge a Pruner Should Have

Many thousands of fruit-trees have been set out during the past year. Some of them are under the care of experienced orchardists who are past masters in the art, as well as the science of orchard management. The trees in many orchards, however, will be under the care of men with but little, if any, experience. If these trees develop properly it is necessary that annual pruning be given.

The pruner cannot do his work well unless he has some knowledge of the character of growth of the different varieties to be pruned, and of the principles that underlie such work. It is my purpose to discuss briefly some of the principles which apply to the pruning of tree-fruits. The application must be worked out at each tree by a study of the individual need.

The development of the tree may be largely controlled by cultivation, by the amount of plant-food applied, or by the character of the pruning. The latter is the most economical and also one of the most neglected of these methods. Before any work is done, some clear-cut idea should be in mind as to why we prune, when the work should be done, and how the work itself should be performed.

Why We Prune

There are many reasons for pruning. The primary result to be secured is to so improve the tree that it may produce better fruit and also more of it. The time is past when we may expect to set out trees and leave them to shift for themselves, finally to be rewarded by abundant harvests of high-grade fruit. If we go into neglected orchards where little or no pruning has been done, we find many limbs crowded closely together, dense tops, branches in all stages of weakness, as well as those dead or dying.

We find the sunlight shut out, and it is doubtless this fact, more than anything else, that influences the color of the fruit; there is poor air circulation, increase of insects and fungi, and a large amount of inferior fruit. We prune then to change these conditions, although we must remember that pruning is but one of the important subjects connected with the success or failure of the orchard.

The spraying, the cultivation and the application of plant-food must each receive its proper share of attention. If we wish to make the tree more vigorous, we remove a portion of the top by pruning when dormant, so that the growth may be concentrated in a smaller number of branches, thus developing a stronger tree and permitting the nourishment to pass to parts where it will do the most good.

We also prune for other reasons: to secure a low or high head; to control the arrangement of the framework or scaffold limbs of the tree so that they will not break under a heavy weight of fruit; to avoid sunscald by having the top low and the trunk well protected from the sun's rays by the branches above; to develop a leader or to form an open-centered tree,

as desired; to facilitate the operations of spraying and harvesting. Pruning is therefore a necessity if these conditions are to be secured.

When to Prune

There is no one time when it is always best to prune under all circumstances. Conditions vary, and the time of pruning depends largely upon conditions. In some cases the pruning is begun before the tree is set, by shortening in straggling or injured roots. It should begin with the first year of the set tree and be continued annually. It is poor policy to let the pruning go for the first few years and then to find it necessary to prune heavily later. Systematic, light, annual pruning is much more desirable than an occasional

severe pruning. Whenever a branch is removed a wound is made. So far as the healing process is concerned, the best time to prune is toward spring as the time approaches for the beginning of growth. If the cut is made in fall or early winter, there can be no healing until growth starts, and the cut surface may be exposed a long while to the action of the weather or to the attacks of insects or fungi.

In a few exceptional cases, summer pruning may be practised, but it must be kept in mind that summer pruning is always a weakening process; yet in some cases with overvigorous, rank-growing, non-productive trees, this treatment tends to check such growth, with a resulting tendency toward the formation of fruit-buds. Summer pruning, if practised,

should be done in midsummer or late July. We cannot, however, say that the mere operation of pruning will result in fruitfulness. The production of fruit depends upon many factors, with pruning as but one of them, and may include character of soil, kind of variety, questions of tillage or of plant-food, of spraying, and it is probable that yields are quite largely dependent on a combination of several of these factors.

How to Prune

When help is scarce and the number of trees large, it may be necessary to prune all winter on pleasant days, beginning operations soon after the dormant period has arrived. Apples, plums, pears and cherries are usually pruned before peaches, as the character of pruning of this fruit often depends on the number of fruit-buds alive after the severity of winter has passed. Fall-set trees, as a rule, should not be pruned until spring, thus lessening the tendency to damage by winter injury.

Some operations on the farm require expensive machinery. The tools necessary for pruning, however, are simple. With but few trees the ordinary saw will be found sufficient, but with large areas the owner assembles a supply of ladders, pruning saws, shears and knives, none of which are very expensive.

When the trees are dug in the nursery, a portion of the root system is destroyed. There is a close relation between this part of the tree and the top, and, after setting, a portion of the top should usually be removed to enable the roots to supply the remaining branches with moisture and food. The practice of cutting back or heading-in the branches for the first three or four years is often objectionable, as such severe pruning results in too many branches being developed, causing a thick-topped tree which must be further severely pruned to make it sufficiently open. It is much better practice to prune as little as possible and yet secure a well-balanced tree which makes a normal growth each year, instead of growing wood which is of no use to the tree and which must later be removed.

Open and Close-Centered Trees

If a one-year-old tree is set, the height of the trunk must be decided. This depends on the climate, depth of snow, danger of injury from animals, the habit of growth of the variety, and the personal ideas of the owner. The tendency to-day is toward lower-headed trees than those set in the past. The peach is headed the lowest; plums, pears and cherries are headed higher, and apples the highest of the tree-fruits. The principal reason for high-headed trees is to secure greater freedom for cultivation, but this may be offset by a greater cost in time and money for the operations of pruning, spraying, thinning and picking the fruit, and the fruit is also more likely to be blown off by heavy winds. Various orchard tools are now on the market, so that the ground may be fairly well worked without the horses being driven close to the tree-trunks.

The framework of the tree must next receive attention. We may have an open-centered tree, or it may be a close-centered tree with a leader. The open-centered tree consists of four or five main branches ascending obliquely. The close-centered tree has a central shoot continued above the first set of branches to form a second-story tree, as it is often called. From three to five main branches should be selected [CONCLUDED ON PAGE 9]

Land-Marking Devices

A Few Especially Good Ones That Can be Made at Home

By J. G. Allshouse

AHANDY two-row marker can be constructed from an old iron-frame walking cultivator. Remove all the shovels but the rear one on each side; spread the frame to hold the two remaining teeth or shovels the desired distance apart, bracing with a 4x1-inch board of suitable length; wrap with wire where ends of brace touch the frame-pieces.

Fig. 1 shows a four-row, two-horse marker that is excellent by reason of its simplicity and its adaptability to work on uneven ground. For runners use 2 or 2½ inch planks, 8 inches wide and from 2 to 3 feet in length. Two 2x4-inch cross-pieces are spiked, after mortising slightly, to the middle runners and projecting 6 inches over runners. Similar pieces are spiked to the outside runners, and hinged to the projecting ends of the middle pair by running a long rod or bolt through, as shown in the sketch. A wagon-tongue is fitted between a pair of 3x4-inch pieces which are bolted lengthwise on top of crosspieces fastened to the middle runners. Brace the runners well.

A seat may be provided if desired, and a gage-pole hinged to the crosspieces of

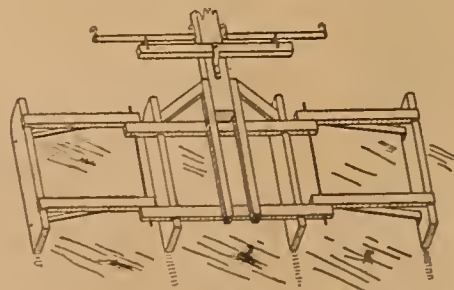


Fig. 1—A four-row, two-horse marker

the middle runners to extend out on either side of marker and hold a drag chain or wooden tooth. When turning, lift side runners up on top of middle pair.

Fig. 2 shows a useful adjustable marker. This will mark rows from six inches to four feet apart. Use four 2x3-inch pieces of well-seasoned oak about 8 feet and 8 inches long, and five pieces of 2x4-inch material, 12 inches long.

Lay the long pieces down in pairs, and bolt permanently three of the 2x4-inch pieces between them, one at each end and one directly in the middle. The other 2x4's are capable of adjustment between the long pieces. Set a share from an old shovel-plow in the center piece and in the

two movable pieces. Now bore ¾-inch holes in the frame, and corresponding holes in the movable shovel-holders so they may be set at whatever distance apart is desired and held by ¼-inch bolts. Thus the rows may be spaced to suit the de-

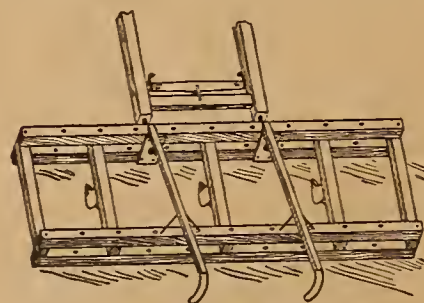


Fig. 2—An adjustable marker

mand. Fit in shafts and attach old plow-handles, as illustrated.

A labor-saving device for those who mark corn-ground both ways before planting is easily made, as shown partially in Fig. 3. If rows are to be 3½ feet apart, make as follows: From a 2-inch plank cut four wheels (B) 14 inches in diameter, and make a frame of scantling (DD) 1½ feet wide and long enough to hold all the wheels when 3½ feet apart. Now, take a 2x4 piece (A), 10½ feet long, and mortise edgewise across from wheel to wheel, so as to project one inch from edge of each wheel. The axle (C) can be a scantling 2 inches square and rounded at each end to revolve in the frame (DD). Put tongue in frame, and in the back piece of frame put two pegs with which to guide the marker. In using the marker, raise up when edge of plat is reached, and weight of crosspiece (A) will cause it to swing to under side; have cross marks right when beginning at sides of plat, and drive straight. If rows are wanted 3 feet apart, cut the wheels 12 inches in diameter and set 3 feet apart in frame. The edges of the wheels and the crosspiece may be sharpened slightly with a draw-knife. Fig. 4 shows an excellent wheel-marker for the garden, and especially is useful in transplanting onions and other small plants. Make the wheel [CONCLUDED ON PAGE 10]

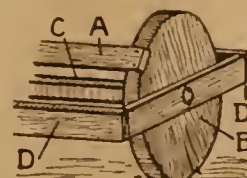


Fig. 3



Growing Asters for Pleasure and Profit

How Thirty-Five Acres of Highly Bred Flowers are Raised and Marketed

By Charles E. Johnston

"To him who in the love of Nature holds Communion with her visible forms, she speaks

A various language; for his gayer hours

She has a voice of gladness, and a smile

And eloquence of beauty, and she glides

Into his darker musings, with a mild And healing sympathy that steals away

Their sharpness, ere he is aware."

H. B. Williams

LET me tell you of a little journey to the aster farm of H. B. Williams, in Onondaga County, New York. Mr. Williams had a love of Nature, and his communion with her visible forms has developed the largest and most successful seed-growing aster-farm east of the Rocky Mountains; now thirty-five acres of magnificent bloom, acre after acre of lavender, crimson, violet, blue, pink, purple and white.

This wealth and beauty of color, form and size—for these asters are from three to seven inches in diameter—were not gained in a day or a decade; twenty-five years is the span of time that has elapsed since this grower commenced his experimental work.

Mr. Williams' earlier business was selling dry goods, but Mother Nature had a hold on him, and he began by growing asters in the little yard in the rear of his home. Year by year these growings continued. By careful selection of seeds from the best bloom and the strongest and most symmetrical plants, variety, size and color were attained. But one day the unexpected happened; fire destroyed the

stock of dry goods, and a gas explosion destroyed the building, and Nature got Mr. Williams as a full-time aster-grower.

Forced Into the Aster Business

Nature always has her way, sometimes by persuasion, at other times by force; in this case by force. Mr. Williams was literally blown out of the dry-goods business into the business of growing asters. During this early experimental work much had been learned. Records of results were kept, so that the work could be compared year by year and progress definitely determined.

Then another thing happened, one of the large seed distributors of the East visited the Williams aster-farm and contracted for its entire annual product. So the growing end and the distributing end met, and the circle was complete. The seed output increased year by year, the distributors taking all that was grown. The annual output now is about fifteen hundred pounds, or in the neighborhood of thirty-six million seeds.

Corn-Land Will Grow Asters

Experiments by numerous amateur growers in the Northern States show that asters can be grown almost anywhere. Visit any country home, any hamlet, village or city, and wherever you see a flower garden you will see asters in great profusion. Surely they are a popular flower.

In reply to the question as to what kind of soil was best adapted to growing asters, Mr. Williams said, "Any soil that will grow good corn will grow good asters."

While Mr. Williams' statement, that good corn-land will grow good asters, is true in a broad sense, yet in the application he makes a careful analysis of the soil in the various fields, and fertilizes according as he finds the need. Barn-yard manure being used at the rate of about twenty loads to the acre, spread on the

surface in the fall and plowed under in the spring. In addition to this, commercial fertilizers of various kinds are used. Wood-ashes, ground bone, fish and lime are the principal fertilizers, all mixed on the farm and applied according to the needs of the soil and plants.

The plants are started in cold-frames in the month of April, and covered with cheese-cloth. About ten thousand yards are required to cover the beds. The beds are six feet wide by sixty feet long. The seed is planted with a seed-drill in rows about one foot apart, and two seeds to an inch in the row. The small plants are given air and water as needed, and kept free from weeds. When the plants are about six inches high, and the open-field ground in good condition to work, which is ordinarily from the first to the tenth of June, they are transplanted from the growing beds to the open field. The plants are set with a transplanter, eighteen inches apart in the rows, and the rows three feet apart.

The aster is quite a hardy plant, but to insure its best development it needs careful and continued cultivation. Weeds must be kept down, and the surface of the ground kept soft and mellow. This is done by an implement known as the Prout Hoe, drawn by a team of horses. This hoe works close to the row of plants, cutting the weeds at the roots, leaving the ground smooth, and makes a dust mulch, a perfect protection against either dry or wet weather.

How the Varieties are Kept Separate

When "Roques" appear, which are plants not producing perfect flowers conforming to the type which they represent, they are treated as weeds, pulled out by the roots and thrown on the compost-heap. Flowers imperfect in either form or color are not allowed to ripen seed. In order to keep the varieties from mixing, corn is

planted closely in spaces which are about six feet wide. The different varieties vary in size of plants, in size and form of bloom and in the number of flowers which they produce. In some the bloom is compact, while others are open, from five to seven inches in diameter, and closely resemble chrysanthemums.

Harvesting and Threshing

Plants of the early varieties begin to bloom in August, then follow the later varieties, and all continue in bloom until the frost appears. As the seed ripens, the flowers fade and turn brown. The seed is gathered from the first to the middle of October. Seed-harvesting days are busy days. It is no small task to harvest thirty-five acres of flowers in about fifteen days. From fifty to one hundred women are employed in this task. The harvesters break the flowers from the stems, dropping them into pails which in turn are emptied into sacks, which are taken to the warehouse in the village, where the flower-heads are dried slowly in a kiln heated by coal. The flower-heads remain in the kiln about four days, at a temperature of about sixty-five degrees Fahrenheit.

The flower-heads are thrashed with a machine which was invented by Mr. Williams, and which has proved very successful. The seed is thoroughly winnowed to free it from chaff and imperfect seeds, and then sacked and shipped by express to distributors, it being far too valuable to send by freight.

All of the seed grown by Mr. Williams is contracted for by the great seed distributors, and through them is sent wherever asters are known. Some of it finds its way to foreign countries. Mr. Williams has developed the aster-flower from the size of a button to its regal perfection of the present day, rivaling the chrysanthemum in beauty of both form and color.

Efficiency in Modern Road-Building

What You Should Consider in Judging the Merits of Drags and Graders

By Frank C. Perkins

THE illustrations show the use of the modern gasoline tractor in up-to-date road-building. In Fig. 1 may be seen two large road-graders at work behind a gasoline tractor. The machine moves the dirt from the ditch to the center of the road at one trip. Sixty miles of road thirty feet wide from ditch to ditch, and thirty-six inches higher in the center than the ditch, were graded and rolled into finished condition by this outfit in Van Buren County, Iowa. A gasoline tractor was used and the cost was \$20 a mile.

Fig. 2 shows a powerful gasoline tractor hauling a three-way road-drag. At one operation it grades a road thirty feet wide. It is made up of two forward right and left hand sections and one rear section. The right and left hand sections scrape the material from the sides of the road to the center, and the center section crowns the material in the center of the road.

In re-crowning a road, the necessary amount of material must be moved forward and upward from the roadside toward the center of the road. In doing this the material reacts sidewise, downhill, against the drag-blades, and with the ordinary single drag a very objection-

able side draft upon the teams resulted.

The three-way drag fills the horse-tracks and wheel-ruts and leaves the road in a well-crowned, smooth and finished condition. The pitch of the blades is controlled by the levers. Where the roadway is comparatively level and needs only to be

smoothed down, the blades may be kept vertical. When the roadway is rough, the blades can be set to cut and carry the surplus material into the ruts and other depressions.

A mistaken idea has prevailed with some people that a road can be built with a drag, but this is not true. No drag can take the place of a real road-grader.

The wheels of the graders illustrated are adjusted to lean in the direction in which the dirt is being moved, thereby utilizing the weight of the machine to counteract the side pressure of the dirt on the mold-board. Furthermore, because of the leaning wheels, the wheel-boxes run true on the spindles, so that there is no loss of power there. This of course means additional waste of the pounds of pull delivered to the grader. A tractor is more easily handled with heavy road machinery than the equivalent power in horses.



Fig. 1—Gasoline tractor drawing two large graders

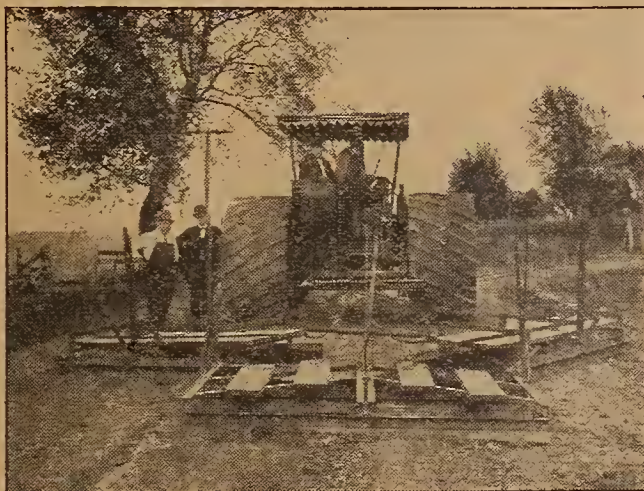


Fig. 2—The three-way drag covers the entire road

Farm Notes

King Solomon and King Silo

By L. L. Klinefelter



King Solomon

THE late King Solomon, king of Israel, enjoys the reputation of having been a very well-informed man, assuming, of course, that a dead man enjoys such things. It is recorded that he had had not less than three hundred wives.

Upon the interesting point as to whether the numerous wives were the result of his wisdom or the wisdom the result of his numerous wives, the records available are disappointingly silent.

However, if you had happened to ask King Solomon whether water and oil would mingle and live contentedly together, most likely he would have said, "No, they won't get along together." At any rate, that is about the opinion the world has held on the subject of the incompatibility of oil and water: that they won't mix.

As I shall show further on, it was left for Mr. Logan Waller Page, the Road Supervisor General and Pathmaster Extraordinary of the United States, to make the interesting and valuable discovery, or invention, whichever you may choose to call it, that oil and water can be made to dwell peaceably together in the making of concrete and cement work of various kinds, King Solomon notwithstanding.

Before we study the material and the "know how" let us consider how important this invention really is.

Its importance lies in the fact that by adding oil to the mixture the concrete is made water-proof.

Ordinary Cement is Not Water-Proof

Many people have an idea that ordinary cement and concrete are water-proof. But this is a mistake. Thousands of dollars have been spent in efforts to find some way of making water-proof cement-work.

To show that cement absorbs water, it is only necessary to call attention to the difference in color of a cement or concrete building before and after a rain. In damp climates the moisture often penetrates the entire wall and makes the whole building damp.

In these days when cement and concrete are used more and more for cellars, basements, silos, and even roofs, the value of water-proof, oil-mixed cement is hard to overestimate.

Since the new process does not differ from the old one except in the addition of the oil, the reader can get first-hand information from any of the leading cement factories about the method for making cement and concrete for all desired kinds of work, by writing to them for their booklets.

Their directions are full and in detail, and anyone can easily follow them.

The present article was suggested by Office of Public Roads Bulletin No. 46, by Logan Waller Page, which can be obtained by sending ten cents to the "Superintendent of Documents, Government Printing Office, Washington, D. C."

"Portland" Cement is Not a Trade-Name

We have no space here to go into details, but there are certain broad facts worth knowing. In the first place, it is an established fact that Portland cement is the best grade of cement manufactured.

Now the name "Portland" is not used to specify the product of any one factory. It is a word used to indicate a certain quality of cement, no matter by whom made, and no reputable concern will put on the market a product and call it "Portland" unless it comes up to certain well-established standards. There are other grades on the market, but they are known by other names.

The next item is sand, and this is always mixed with the cement as thoroughly as possible in certain proportions, differing with the particular kinds of work used for. The sand should be clean; that is, there should be no clay or other earth in it. The sand should also be sharp and not too fine.

The sand should be sifted through several screens of different sizes, and the sizes then mixed together thoroughly, so as to make the sand used in the cement of uniform texture throughout.

The advantage of this lies in the fact that you get a better job where there are small grains of sand to fill the spaces left between the large ones. The difference between cement-work and concrete-work is this: cement-work is cement and sand. Concrete-work is cement

and sand and gravel or broken rock. The gravel or broken rock are added merely to make the cement go further and save expense.

How Cement and Concrete are Made Water-Proof

Under the new plan the resulting product is made water-proof by adding some heavy mineral oil. Some of the residual petroleum-products have been used with success.

From two and a half pounds to ten pounds of the oil are required for every hundred pounds of cement, depending on the kind of work.

The bulletin gives the following simple method of testing the quality of cement:

Moisten enough cement so you can roll it into a marble about an inch or so in diameter; let this dry under a moist cloth for twenty-four hours; then place it in a pan of cold water, and bring the water to a boil, and boil for three hours. If the marble does not show signs of dissolving, it is good cement.

On the farm one of the foremost uses of water-proof concrete is the building of silos, and the oil-mixed concrete will be found the answer to the question, How shall I build my silo? The advantage of the cement silo lies in the fact that it can be made absolutely air-tight, and it is durable. Wooden silos shrink and swell, and the wood decays, and in this way admits air. Metal silos corrode and get loose in the rivets, thus letting in air. Underground silos are inconvenient, and are likely to fill up with water. Properly reinforced concrete is the ideal silo material, now that a way has been found to make it water-proof. The necessity for being water-proof is not so much to keep water out, as to keep the proper amount of water in.

With ordinary cement the walls absorb water from the contents and bring the amount below the point needed for properly developing the heat required, but with oil-mixed cement there is no absorption, and this difficulty is overcome.

And the beauty of it all is that the invention has been patented and the patent thrown open to the public, so that you and I and everybody else may manufacture as much oil-mixed cement as we please without paying a cent of royalty to anybody for the privilege. All we need is the proper material and the "know how."

And now, gentle reader, I regret to remark that I have not said much about King Solomon's wives. But I beg you to remember that, as a rule, it is not best for a man to say too much about other men's wives.

Door Latch for Tricky Horses

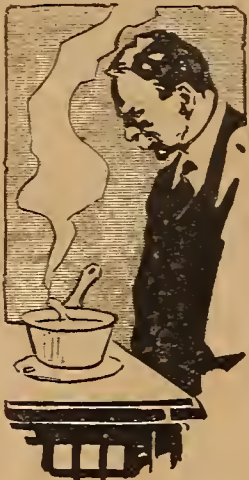
By F. W. Pabst

THIS is a good latch for doors which are likely to be tampered with by tricky horses. It is made by procuring a piece of stiff wire about seven inches long and attaching to one end a lead ball about an inch in diameter. Any other similar weight could be used.

The other end of the wire is firmly attached to an ordinary door button as shown in the illustration. The weight on the end of the wire always hangs down and keeps the button over the edge of the door.



Sift all the sand



Boil for three hours



King Silo

Poultry-Raising

The Other Side of Duck-Raising

By May Ellis

WRITERS about Indian Runner ducks, or any other kind of ducks, for that matter, almost invariably present the agreeable side of duck-raising. Of course one knows there is another side, as there always is to everything, and is inclined to hesitate, feeling some doubt as to how unpleasant that other phase of the matter may be. I have experimented a little with the Indian Runner duck, and have discovered some of the disagreeable features of the business.

I Have Found Them to be Wild

In the first place, instead of swarming about me until I am obliged to push them out of the way, as my hens do, my flock of ducks are in a perpetual state of suspicion as to my intentions toward them. They flutter and squawk and rush madly to remote corners every time I enter their pen.

The other day I exchanged some drakes with a neighbor. Discouraged with previous attempts, I turned the catching operation over to him. This was how he accomplished it. I pointed out the individual to be caught; he fixed his eye upon it, made a wild plunge in that direction, and presently emerged triumphant, bearing the struggling victim from among his shouting brethren. This was one occasion upon which I yield the honors to masculine skill, though perhaps it was merely due to the advantages of masculine costume.

It was a sufficiently difficult performance, anyhow. In moving the whole flock, of course one never attempts catching, but drives them as gently as possible whenever a change of place is necessary.

The second point is that it is much harder to keep ducks clean than hens. Mine have a house with a dirt floor, but across one end I have laid boards and put hay or straw there for a sleeping-place. This hedging needs to be renewed almost as often as for cattle or horses, for the ducks tread it in a night or two to the blackness of mud. They sprinkle water, too, from their drinking-vessel, until the dirt floor is much like a well-baked mud pie.

But lastly, and this is a more important consideration financially, there is a certain knack to be learned in raising young ducks. In the summer of 1911, from two settings of eggs, I raised fourteen ducks; not so bad for a first attempt. Perhaps my courage rose unduly. This last spring I tried three settings, hatching twenty-eight promising ducklings. I raised only half of these, or just the same number as the previous year. At least seven of my neighbors bought from one to three settings of eggs from me, and four of them have reported the result of their efforts. All the settings hatched well—eleven or twelve each. One experienced chicken-raiser states that he saved just two from his twelve.

The Difficulty of Bringing Them to Maturity

Another, with two settings, lost them all; cause unknown and, in absence of evidence to the contrary, laid it at the door of the hen parent, a theory which I hesitate to accept. Two others, one with one setting, one with three, raised the young families to several weeks old, when they fell into a decline and died mournfully, one after another, until nearly all were gone.

The son of another neighbor, who procured his eggs from some other source, called one day, saying "Mother says your chickens always do well, and she wants to know what you think ails our ducks." He detailed the symptoms of decline and death, and I gave willing but futile advice, for later reports announced a total loss. Two other neighbors who had more experience with ducks lost some, but not so large a percentage of their hatchings; one brood perishing through exposure to a thunder-storm, and several others that became "dumpy," lame and helpless and finally died, like mine and those of the other neighbors.

Now I am not exactly sure why all these young ducks died and why my own did not prosper as well as last year. It was very hot for a time, and I let them out of the pen to seek fresh grass and shade. One night it rained, and they wandered gaily splashing in the pools, not becoming chilled, but perhaps overtired.

They Require Greater Care Than Chickens

Once or twice I threw in their pen a quantity of pigweed and redroot, which had been recommended as good food for them. Perhaps they overate. Last year they had meat-scrap, and this season I tried to economize by not ordering any. As they kept on dying, one by one, I rushed to the nearest store and bought bone-meal and some stimulating poultry tonic, and this was perhaps what saved the lives of the remaining fourteen. Bone-meal seems indispensable. The experience merely shows that the

most experienced of chicken-raisers needs to learn some things in order to manage ducks successfully, for they need greater watchfulness and somewhat different care than chicks.

This is not meant to discourage anyone from going into the duck business. Last year I kept only five ducks through the winter. This year I have seventeen, and if the egg record is as good as I hope I shall raise more this year, being careful this time to lay in a supply of meat-scrap and to look out for overfeeding and overexercise.

Poultry on the Truck-Farm

By M. Roberts Conover

WHERE tomatoes, melons and tender, succulent vegetables are grown, poultry-keeping is always a problem. After the crops are marketed a flock of poultry ranging over the fields is a distinct advantage to the land and to future crops, but when the crops are growing the flock should be under control.

Where truck crops are to be grown, two ample pens should be provided for confining the fowls. These pens may be used alternately, allowing the rains and growth of grass to cleanse the one not in use.

One truck-grower has enclosed a plot of fruit-trees and an adjacent plot, both connected with his poultry-house, using them alternately. Each run is about sixty by forty feet, enclosed with a fence of poultry-wire and locust posts—six feet high. This arrangement accommodates a flock of seventy-five fowls from June to the first of October. The shaded yard is used during the warmest weather. The fowls are fed the sortings of tomatoes, cucumbers and melons, in addition to grain. Wheat and oats are the most satisfactory grains to feed under these conditions and during the fall, since they supply egg-building material.

Plant the poultry-runs with clover, a perennial grass, oats, rye or wheat.

Another grower who combines peach-growing with truck upon his farm ran poultry-wire around his acre of peach-trees, keeping his flock in it until the fruit was mature.

Water Glass for Keeping Eggs

By James S. Westcott

DURING the spring eggs are at their lowest value, and the careful housewife should store as many as she thinks she will need against the prohibitive prices of fall and winter.

There are just two methods of storing eggs for future use that are worth considering. The first of these is to place them in a cold-storage plant until needed. The other is to keep them by the use of water glass, or silicate of soda. This last is more convenient, and for the family costs less. It is, moreover, successful in keeping the eggs from eight months to a year.

It is Not a Preservative

Eggs kept in a solution of water glass for eight months are practically as good for every kitchen purpose as fresh eggs, except for the purpose of boiling. To be boiled successfully a small hole should be made with a needle in the large end of each egg, to permit the exit of air from the egg, which otherwise will burst the shell.

Water glass is not a preservative. The eggs keep in it by reason of being hermetically sealed in their shells. The eggs to be kept should be perfectly fresh, and clean. It is better that the eggs be infertile, though this is not necessary.

Another requisite is that the receptacle in which the eggs are placed be of stone, earthen ware or wood and not of metal, which might rust and discolor the eggs, and that it be perfectly clean. The eggs may be stored all at one time, or as gathered from day to day.

How It is Prepared and Used

Water glass may be bought at any drug-store at from fifty cents to two dollars per gallon. We buy it in tins containing about a quart and costing fifteen cents each. These tins will preserve fifteen or sixteen dozen eggs of ordinary size. Each quart of the fluid should be diluted with eleven quarts of water, boiled thirty minutes and allowed to cool before mixing. After mixing pour into the receptacle which you have prepared. The eggs are now placed in the water glass. We generally place them in with the little end down. The fluid should come three inches over the eggs when all are in the receptacle.

The Eggs Should Not Float

I see no objection to selling these eggs, if it is distinctly understood by the purchaser that they have been stored in water glass, and no doubt a good near-by market could be found in most communities with a little inquiry. We have never sold any, but feel that it pays us to store a few dozen for our own use. The eggs thus stored should be put away in a cool place.

As water glass may not always be secured of the same density, after diluting with water as above the eggs may float. Should this occur, thin with water prepared by boiling and cooling as directed at the first until the eggs remain under the fluid.

GARDENING

By T. GREINER

Thinning Apples

THAT the professional Eastern apple-grower, by care and culture and spraying, is successful in getting big crops of apples to grow on his trees, is proved by the fact that many of them now are enthusiastic advocates of the practice of thinning. Our best peach-growers, and some pear-growers too, have for years practised thinning their fruits.

This plan is now recognized as applicable to the apple also. Our most experienced growers who have tried the plan say it makes considerable work, but it pays well.

The surplus apples, when about one third grown, are taken off the overcrowded limbs, leaving only perfect specimens about three to six inches apart. This plan, with proper spraying, eliminates the wormy fruit and the seconds and culls.

Experienced growers now aim to grow nothing but first-grade, and many of them succeed in getting the culls down to a very small percentage, less than five. The cost of thinning a full-bearing apple-tree is estimated to range between fifty and seventy-five cents per tree. The thinned tree yields slightly less in bulk than the unthinned tree, but this deficiency is made up by the ease and reduced cost of picking the remaining fruit, and in sorting and packing.

Currants for Local Trade

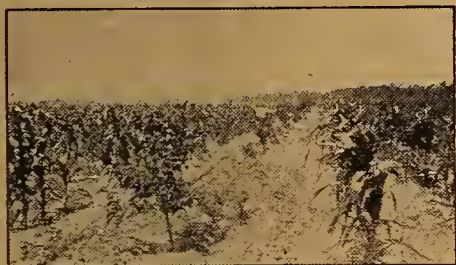
The currant seems to be particularly suited for the home garden and for market gardens with a local trade. It succeeds in almost any locality, but prefers heavier soils, yielding then far more heavily. The leading red varieties are Wilder, Fay, Cherry, Red Cross, Perpetual, Pomona. I prefer the Wilder, and no other. For a white sort, and for family use only, White Imperial stands at the head. Thrifty two-year plants are best for planting.

Florida Money Crops

Winter storms and the coldest weather of the whole year in the North—and harvest-time for oranges, lemons and grapefruit, as well as general garden-planting and gathering vegetables in Florida! What a wide range of climate in our blessed land!

Most interesting is the grapefruit, or pomelo, emphatically a Florida product, although quite largely grown also in California. Like the tomato, it had to grow by slow degrees into the appreciation of the consumer, but wholesome like the tomato, as it is reputed to be, it has now become quite popular. We would use many more if offered at lower prices.

The tree shown in the picture is fifty or more years old and bears on an average



Field of corn planted between young grapefruit and orange-trees

sixty boxes of fruit per year. It measures forty feet in diameter, with a trunk twenty inches through. Young budded trees will begin to bear the third year after being set out, but not in paying quantities of fruit until the seventh or eighth year. In the meantime, however, garden vegetables can be grown between the rows with considerable profit, if rightly managed and, of course, liberally fed.

Among the garden crops grown largely and profitably are celery and lettuce. The cucumber crop is also an especially promising one. The preparation of the cucumbers for market, as done under the protection of a tent, is nicely shown in the picture. In



Packing cucumbers for market

the locality where these were grown, near Arcadia, the seed is planted from the tenth to the fourteenth of February, as the plants would not be quite safe from frost before that time. Cucumbers there are as easily grown as in the North three months later.

To plant them, a furrow is run for each row, and fertilizer or fine stable manure is spread along the furrow. Next two furrows are thrown upon the fertilizer or manure from each side, forming a ridge, on which the seeds of any good variety, such as Perfection White Spine, Early Fortune, etc., are planted in hills four feet apart. Six hundred crates to the acre is only an average yield. Some growers report a yield



A fine cluster of grapefruit

of a thousand crates per acre. When ready, the cucumbers are gathered daily, being cut off with clippers and packed in bushel hampers for shipment north. The price realized

in market varies from one dollar to five dollars per hamper, but the transportation and other expenses are necessarily large. This information was furnished by J. B. Huffman, whose smiling countenance may be seen under the pomelo-tree, at the right.

Raising and Curing Bush-Beans

A good warm farm loam containing a fair amount of humus but not necessarily rich otherwise is perhaps the best soil for common field-beans. Work it up well with plow and harrow. Our summers have been unusually short for some years, and I would plant not later than June 1st. Make the rows three feet apart, and use seed enough to have a plant to about every three to six inches, or three every eighteen inches.

Keep the weeds down and soil loose by frequent cultivation. Hoe, when plants are dry, if necessary. When most of the pods have become ripe and dry, and anyway before frost in the fall, pull the plants, either by hand or with a bean-puller. They may be placed in rows on the ground, bottom side up to cure, and are then to be put in stacks, or stored in an airy loft in the barn, and thrashed in due time. The beans are then put through a fanning-mill and sorted.

Salt Not Needed

I am asked whether I use salt on the asparagus-patch. I do not, and have seen no effect from it when applying salt to asparagus years ago. Save yourself the trouble. But don't forget the manure, and a plenty of it!



Raising Oats without Proper Fertilizing is Mining—Not Farming

To depend wholly upon the natural supply of plant food in the soil is neither most profitable nor most economical.

Oats take from your land more potash than phosphoric acid or nitrogen. You must supplement the supply of available soil

POTASH

by a fertilizer rich in this element, or your harvest may not pay you for your labor.

Potash Pays in heavier heads, better grade, a greater proportion of grain to straw, and freedom from lodging. Balance the phosphate and nitrogen with 6 to 8 percent. of potash.



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The Headwork Shop

The Latest Output of Ideas by Thinking Farmers

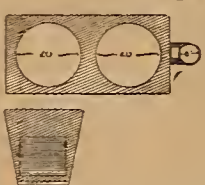
Tripod for Bucksaw



wood-pile? I don't. By nailing three old rails together I make a tripod which I have at a convenient distance so that I can turn my arm around and easily reach up to hang the saw. This keeps it out of the way, out of the snow or mud, and it is always where you can reach it easily.

The sketch shows how tripod is made. Leave end of one cleat long enough to hang saw on, or drive a spike in one leg of tripod. **O. H. ALBAUGH.**

It Pleases the Hogs



ONE of the handiest things we have on our farm is our stove. I had it made to order out of sheet iron at a cost of \$6.50. It has been in use for about ten years. It is four feet long, two feet high, two feet wide at the top and one foot wide at the bottom. I use it every day during the winter for cooking turnips and potatoes for the hogs and chickens. There are two large kettles on it. It is very little work to cook two bushels of turnips or anything desired.

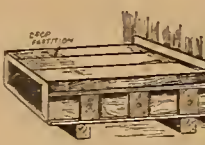
In the morning I fill the kettles and start the fire in the stove, and by noon it is cooked ready to feed. In this way the hogs have their warm meals, which is especially desirable in cold weather. The stove is also handy at butchering-time and on wash-days. **C. R. BASHORE.**

Hold-Me-Tight Sawbuck



FARMERS who are still saving their wood by hand can greatly lessen this laborious task by using the sawbuck illustrated. Simply take about nine inches of a discarded saw-blade, punch a hole in each end of this, and spike it to the top and inside of one of the two crosspieces of the sawbuck, allowing about an inch to project. This will firmly hold the wood from moving or slipping out of place. **JOHN M. NEWTON.**

For Catching Fowls



When you wish to catch grown fowls to apply insect-powder for lice or for culling out a flock, catching by hand or with a wire hook is no easy task, besides it frightens them very much. The catching-box illustrated saves time and steps, and fowls are less frightened.

The box can be made any size desired. One twenty by twenty inches by five feet will hold a good number of fowls. One end of box which is left open is placed at a small door where chickens generally leave the coop. The other end and one side is of wire netting. This admits light and induces fowls to enter box with little scaring. Three doors made to slide back and forth easily and large enough to admit a large fowl are placed on other side. Holes are made in the center of doors through which the catcher can see the fowls.

A partition to drop in where dotted lines are shown keeps chickens at one end when all are caught but a few. Enter coop, and drive fowls in box till full, then close entrance door. Chickens can be caught by legs and drawn out at slide doors one by one. Two people can do the work quickly, one catching fowls, the other applying powder. **FRED L. BAILEY.**

It Prevents Runaways

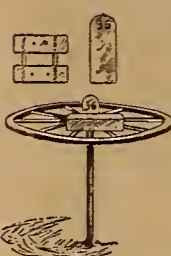


MANY accidents have occurred by the sleigh or wagon tongue pulling out of the neckyoke. A broken tug or whiffletree will cause the tongue to drop to the ground, and if the team gets frightened or has a desire to run away, it is impossible for the driver to hold them, as the wagon will go one way and the team the other.

Here is one of my inventions which will prevent any such accident. Get a blacksmith

to drill a seven-sixteenths-inch hole through the cap and tongue, about two inches in front of the holdback, and put in a bolt that fits loosely and projects about two inches on the under side of the tongue. Put a tight nut on the end of the bolt so you cannot lose it. By raising and lowering the bolt the neckyoke can be easily put on or taken off. With this device the tongue will never drop out of the neckyoke ring. **F. W. BRIARD.**

A Wheel Mail-Post



AFTER seeing many mail-boxes torn off by careless drivers, I devised the following way to prevent it. Take an old wagon or buggy wheel and an iron axletree. Drive the axle into the ground, then put the wheel on. Take two one-by-two, pieces eight inches long, and bolt these on spokes far enough back so box will set inside of rim. Then take a one-by-five piece fifteen inches long, and fasten this to cleats. Then set box on and fasten high enough so the driver's wheel can pass under it. If any part of his rig hits it, it will turn, and no harm will be done.

The wheel will span a ditch or fence where a common post could not be used, making it handy on one side for the mail-carrier and on the other for you. Paint it, and it will be ornamental as well as very useful. **GEORGE W. FATTEY.**

A Kink for Cleaning Rifles



TAKE an ordinary cleaning-rod for a .22 caliber gun and a string over twice as long as the rod. Put the string through the eye of rod, and twist or wind the string on the rod to the required size.

If it sticks in barrel, simply unwind the string. It will not stick like a rag and can be wound to fit any size gun. **W. C. HOWDLE.**

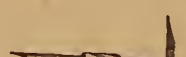
Cat-Proof Bird-House



LAST summer a cat used to climb our bird-box pole and steal young martins, so I took an old stove-pipe two feet long, and cut it open and nailed it around the pole as shown in the sketch. It fooled the cat.

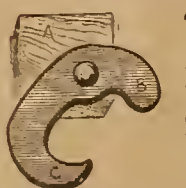
It is best to put the stove-pipe on the pole before the martins come to build. Put it about six feet from the ground. **PAUL SCHULZE.**

To Clean Horses' Hoofs



THE hook illustrated is very useful for cleaning horses' feet. Take an iron rod about fifteen inches long, bend a hook about two inches long on one end, and sharpen both ends like a chisel. Take a piece of wood about four inches long, and slip on the rod for a handle. If the handle does not fit tightly, use wedge to make sure of a firm grip. **W. A. WEEDON.**

Ever-Ready Door-Fastener



THIS is a very handy instrument which can be used to fasten an open barn-door securely so it cannot blow shut. The illustration is one third the actual size for an inch door, but of course if it is to be used for a thicker door it must be made larger according to the size of the door.

It should be fastened at the end of a block of wood (A) which must be securely nailed or bolted to the side of the building.

The door is thrown open, and as soon as the end of the door touches B it will move the point C so as to hook in the door, which guarantees a sure grip. It is easily loosened just by pulling the hook back so as to release the door. Though simple, it is very useful. **H. V. WIENEN.**

Headwork Winner—March Fifteenth

The first-prize contribution in the Headwork Shop in the March 15th issue was "A Latch for the Wire Gate," by **James A. King of Illinois.**

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Garden and Orchard

Concrete Benches for Greenhouses

By Marc N. Goodnow

THE average life of a wooden flower-bench is about five years. At the end of that period it is necessary to tear out and throw away long stretches of rotted timbers and rebuild for another five years. The florist must figure on this cash outlay, and it is no small item in the life of a business. With the comparatively recent use of cement and crushed stone in the manufacture of concrete lumber, however, this large item of useless expense is being eliminated. The construction of flower-benches now utilizes concrete lumber in rather an ingenious way and makes for permanency and reduced cost.

A notable example of this sort of construction is to be found at the cut-flower nurseries of Poehlmann Brothers, at Morton Grove, Illinois, where



to be a complete success in every respect.

The Different Sections Used

The pieces or sections of lumber necessary to set up this form of bench are as follows: Tapered posts, 6 inches square at top and 8 inches in diameter at bottom. They are 2 feet high and rest on circular bases 10 inches in diameter and 2 inches thick. Slots are formed at the top of the post for the cross-beams. The slot is 3/4 inches up and down, 2 inches deep, 1 1/2 inches wide at the back and 2 inches wide at the face of the post. Three-quarter strips fastened at the corners of the mold (Fig. 1) give the post an octagonal shape. Fig. 2 shows a



completed post, and Fig. 3 the method of locking the form at the top.

Cross-beams, 49 inches long, 6 inches wide and 1 1/2 inches thick, fit into the slots crosswise of the bed shown by A, Fig. 4.

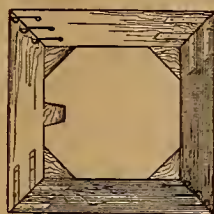
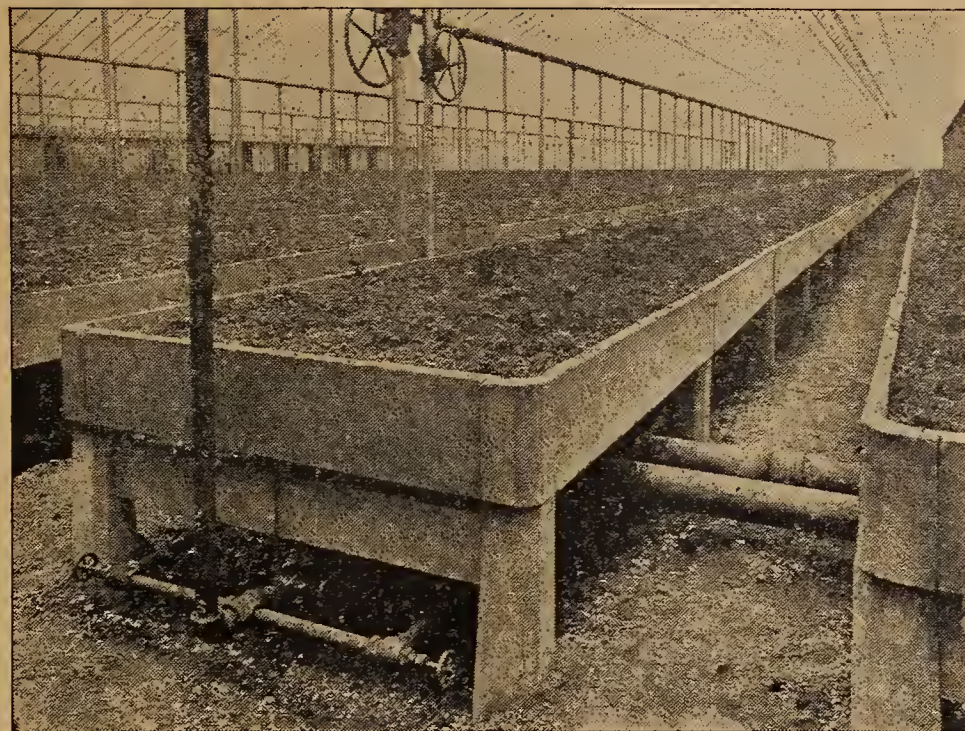


Fig. 3

Stringers, 6 feet 2 1/2 inches long, 4 inches wide and 3 inches thick, rest on the cross-beams and support the bottom slabs through the middle (Fig. 4, B).

Side slabs or L's are 6 feet long, 10 inches high and 1 1/4 inches thick, with an angle 3 1/2 inches wide at the bottom upon which the bottom slabs rest. These are reinforced with mesh wire 10 inches wide and four angle-irons 10 inches long (Fig. 4, C).



Concrete greenhouse plant-bed constructed in the manner described

Bottom slabs, 53 inches long, 9 1/2 inches wide, 1 1/2 inches thick, reinforced with three or four quarter-inch twisted iron bars, form the bottom of the bed (Fig. 4, D).

There are also end pieces, 55 1/2 inches long, with short elbows at ends to connect with side slabs.

All pieces except the posts can be made in a form such as that described in FARM AND FIRESIDE for February 15th in an article entitled "Concrete Lumber for Fences." By devising compartments of the proper size, any one of these pieces, sometimes two, can be manufactured. The side slabs or L's require some nicety of adjustment, because it is necessary to construct the flange or elbows first and add

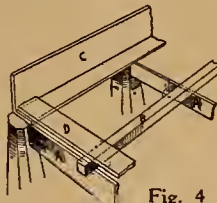


Fig. 4

the upright slab to it. The flange is set on the bottom of the mold first. The mesh wire is imbedded in it and bent up alongside the face of the mold. Four one-fourth-inch bars are inserted at regular intervals between the meshes and bent at right angles. Then, covering the flange with a board set one and one-fourth inches from the face of the mold and supported securely at the back, the ten-inch upright for the side of the flower-bench is made by tamping concrete around the reinforcement.

The end pieces are made in the same mold, their elbows ends being tamped in at the ends of the mold and the length of the slab laid face up as in the construction of a plain board. When properly set, these pieces are lifted bodily out of the form, still resting on the two-inch board which forms the bottom of each new casting.

The posts are cast in molds, the mixture being rather wet. The block of wood attached to the face of the mold in Fig. 1 shows how the slot is made for the cross-beam. The other three sides of this form are plain and lock together by means of latches. The posts are reinforced with a single rod which connects them with the circular base upon which the post mold should set when being poured. The base is easily made in a circular strip of iron which will unlock after the concrete has hardened.

The mixture for this work consists of one part Portland cement to four parts fine gravel. For the slabs the mixture is dry enough to tamp well. For the posts it is wet enough to be poured and much coarser. If any slabs should break in handling, they may be broken up into quarter-inch bits and used as a body for the post mixture. Each piece, after removal from the form, should be set away in a sheltered spot and given a drenching at least once a day for a week.

How This Lumber is Set Up

In setting up concrete-lumber benches there is a large saving over the use of wooden boards and nails. Posts are placed in position in a double row, the cross-beams fitted into the slots, the stringers set lengthwise over the cross-beams, and the side slabs with the flange over the post are held in position. The bottom slabs are then placed in position over the flanges, and the thing is done; the weight of the bottom holds the frame in place until it is loaded. No drains are necessary, as the water will run through the rough edges of the bottom slabs.

An average day's work for two men at a single mold was, in the manufacture of these pieces, from one hundred and seventy-five to two hundred bottom slabs and cross-beams and side stringers. From eighty to eighty-two side pieces with flanges were made in a single day by two men.

The Art of Proper Pruning

[CONTINUED FROM PAGE 4]

to form the framework, so distributed as to hold the weight of fruit without breaking, and they should be at some distance from each other, not crowded or forming a crotch which will almost always cause trouble in later years. The subsequent yearly pruning is simple.

The top should be kept sufficiently open to air and light, crossed branches should be avoided and branches should not crowd. The habit of growth must also be considered, and often modified by pruning a too upright grower to an outer bud, or by pruning a too spreading grower to an inner or more central bud.

Where to Make the Cut

In older orchards pruning consists in cutting out the dead, dying or diseased branches, removing a branch where crowded, and the removal of crossed branches. Care should be used not to overprune. A neglected orchard should require about three years to bring into proper shape. If all the pruning be performed the first year, a mass of water-sprouts soon develops, causing much more pruning later.

In too many orchards we see stubs that have failed to heal over, and which have died back, encouraging rot to develop in the trunk or main branch, resulting in serious injury, if not in the destruction of the tree in later years. Such conditions should be avoided. It will be observed that there is a bulge at the base of the branches. The cut should be made close to this bulge and parallel with the direction of growth.

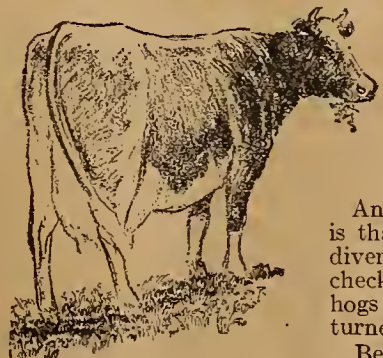
When large limbs are removed it is advisable to cover the cut surface with some material that will afford protection against decay. These materials will not necessarily cause the wound to heal faster, but they afford protection from unfavorable weather conditions and against the

attacks of insects and disease, thus preventing decay. The best dressing is one which will not injure the tree, is adhesive for a long time, and keeps out moisture, insects and fungi. White lead paint is usually one of the most available and satisfactory coverings for such a purpose.

In conclusion, the fact must be ever present that pruning cannot be done by rule of thumb; the line of treatment or method to follow depends entirely on conditions which are extremely variable, and a study should be made of the need of each individual tree, applying the remedy according to the principles which are unchangeable, and which should govern the actual operation of pruning.



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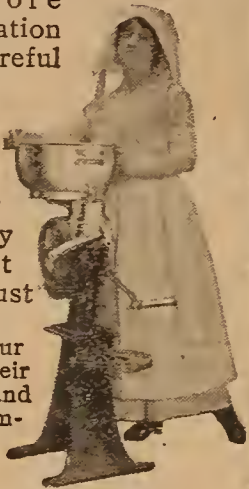
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Herbs of the Old-Time Garden

By H. F. Grinstead

OF A score or more common garden herbs, used for culinary and medicinal purposes by the housewives of old, and yet popular in Europe, there are not more than four varieties that are commonly grown by the American gardener. That many of these have no economic value is a fact, yet there are many of them that are considered indispensable by those who have used them.

We have the sage, to be found in every garden and used for seasoning sausage and dressing, and parsley, for garnishing meats and for flavoring soup. It would be a surprise to many to know that there are garden herbs to take the place of either of these, and in some cases superior to either.

Thyme is a perennial, but may easily be started from seed. Its value lies chiefly in its fine flavor for seasoning soups and meats. A tea made by infusing the dried leaves is used for sick headache.

Savory, both summer and winter, is one of the most desirable of garden herbs, the leaves being used in dressing of fowls and on fish. They may be used either fresh or dried.

Balm, tarragon, marjoram, basil and fennel are all aromatic annuals, and the leaves are used for a variety of purposes, chiefly on account of their delightful flavor.

Lavender is grown for its pleasant odor, and the leaves kept in drawers and wardrobes impart a pleasing odor that remains for a long time after they have been removed. A tea to use for sleeplessness is made by pouring hot water over a teaspoonful of the dried leaves and allowing to set for an hour.

Dill derives its chief value when used in pickles and to flavor kraut. The seed of dill is the desirable part.

Caraway and coriander are easily grown, the seed being used to flavor cakes and cookies, as well as candies and liquors. Anise is used for the same purpose.

Horehound for cough-syrup, tansy for a number of common ailments, and catnip are some of the old favorites of those who make home remedies.

All of these may be grown from seed planted in drills in early spring, though some of them, as sage, thyme, horehound and tansy, are usually propagated from sets or roots. Parsley and a few others are biennial and will need to be seeded every two years. Nearly all the annuals will reseed voluntarily when once started.

In saving leaves to dry they should be picked when the dew has gone off in the morning and dried in the shade where there is a good circulation of air. Leaves and blossoms should be gathered when the blossoms appear, as the foliage then has a maximum of strength. The leaves should be perfectly dry before bulking. A very good place to keep them so that they will retain their strength is in glass jars.

Mint, dill and tarragon are more frequently used as infusion. To make this, fill a jar with the fresh green leaves and add strong vinegar. Other herbs may be prepared in the same way.

The seed of dill, coriander, anise, caraway, etc., should be gathered when perfectly dry and kept in sealed jars or packages.

Land-Marking Devices

[CONTINUED FROM PAGE 4]

(A), by sawing from a 1 1/4-inch board a disk 16 inches in diameter, and from a 2-inch plank two other wheels each 1 foot in diameter; fasten the two 1-foot wheels on sides of the 16-inch wheel and put on axle of about 2x2-inch material 7 or 8 inches long. Drive pins in ends of axle, as in cross-section (B). Make a frame of handles and crosspieces to hang the wheel in, and

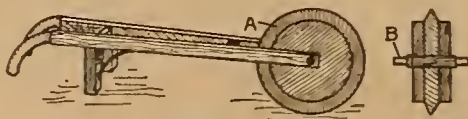


Fig. 4—A simple single-row marker

if desired put a floor on like a wheelbarrow. When ground is well harrowed or rolled, the marker will make a tapering track in which plants can be set rapidly; the center wheel (A) is sharpened on projecting edge, and the outside wheels keep it from entering too deep, and also serve to compact the ground around the track. Weight it with stones. If you wish to indicate the distance apart to set plants, nail small cleats on edges of one or both outside wheels, to make indentations the required distance apart along the row.

Success with Tomatoes

By J. F. Williams

HAVING grown tomatoes with almost uniform success for some ten or twelve years, I take keen delight in giving some of my experiences with this vine fruit.

Contrary to the too common advice I have found by repeated trials that stable manure is a good thing for tomatoes.

I used to put a large shovelful of well-rotted manure under each plant, thoroughly mixing it with soil. I now prefer thoroughly manuring my soil for sweet corn or cabbage

and plant to tomatoes the following season, using a liberal dressing of commercial fertilizer strong in acid phosphate, broadcasted before setting plants.

I usually get potted plants of a florist, set early in May, and give good, deep cultivation, often spading all the space between rows and hills.

For early market I like the Earliana type; June Pink best of all. For the main crop of medium and late sorts nothing suits me quite so well as Matchless.

Whether to stake or let spread depends much upon the season. In 1911 I made the best money per plant I have ever made, without any stakes or trellises. Last season I staked most of my crop, and was fortunate again, for the spreading vines made almost nothing. I expect to stake them all hereafter.

Bean-Vines as Screens

By Cora J. Sheppard

TO THE east of our garden was an unused brick building which we did not consider very attractive, and I secured permission from the owner of the land near it to use it for Limas. There was room for about fifty hills. And who ever had too many Lima beans? We want them very early, and this is the way we get them ahead of other people.

We melt the tops and bottoms off old tin cans, place them in the cold-frame, fill with



The bean-vines described, ornamental and profitable

dirt and plant our beans very early. They have a good start by the time all danger from frost is over and it is safe to set them in the garden. These very early beans are greatly enjoyed at the home table.

We have sold the surplus of our very early beans for as high as fifty cents a quart. We never tire of them on the home table and are sorry when the fall frosts come to kill them.

When we are sure there is going to be a heavy frost, we pull the vines and put them under cover and finish picking the beans as we need them.

Bean-vines, as shown in the picture, are graceful and pretty and make good screens for unsightly places.

Canners' Berries

By T. Greiner

THE old Wilson is the strawberry which the canners prefer. Warfield is much like the Wilson, and may go under that name. Climax, Superior, Parson's Beauty and Gandy are used to some extent. Senator Dunlap is good. Brandywine, one of the finest, does not stand up well in the can.

Among raspberries, the canners call for Cuthbert, for fancy trade, and Columbian, for the cheaper trade. Cumberland and Plum Farmer are preferred among the blackcaps, and Erie among blackberries.

The Canker or "Measuring" Worm

By Clarence M. Weed

THE canker-worm has long been known as one of the most destructive orchard insects. It often ruins the leaves of apple-trees by feeding upon the green surfaces. The young worms hatch in spring from eggs laid upon the bark of the twigs, branches or trunk. They are green or brown, striped with darker lines. On the under side just back of the head there are six jointed legs with sharp claws. Near the hind end of the body are four or six blunt legs. There are no legs whatever on the middle of the body.

Consequently, when the worm moves, its body assumes the shape of a hump or hook, so that it is often called a looping caterpillar or a measuring-worm.

These canker-worms have the power of spinning a silken thread from the mouth. If you jar a twig on which they are feeding, they drop toward the ground, each hanging by a thread.

The worms that hatch from eggs as the leaves open continue feeding for about six weeks, when they become full-grown caterpillars and change to the pupa state.

Fortunately these canker-worms are readily poisoned by spraying and cause no damage in orchards that are sprayed.

Lice on roosts can be killed by spraying with kerosene.

We hear of this or that public man being given an ovation, but few ovations are out-and-out gifts any more.

The Tent Caterpillar

By Clarence M. Weed



THE apple-tree tent caterpillar is one of the most abundant insect pests in the Middle and Eastern States. During April and May it is found along roadsides and in orchards on apple and wild cherry trees, making unsightly tent-like nests and eating the foliage ravenously. During the winter these caterpillars are on the tree-twigs. Early in spring they hatch and begin feeding on the buds or young leaves, making also a silken tent in the fork of a branch for protection. As they grow the tent is made larger. The caterpillars remain in it when not feeding. The illustration shows the moth of the tent caterpillar, about half-size.

These caterpillars have rather regular times for their meals, leaving the nest and returning to it in processions. They feed for about six weeks before becoming full-grown caterpillars, and when abundant will defoliate whole trees. At this time they are about two inches long, with a hairy body, ornamented with a distinct white stripe along the middle of the back. Along each side there are many yellow lines as well as numerous spots and streaks of blue.

From Cocoon to Moth

Most of the full-grown caterpillars leave the tree and crawl about till they find shelter beneath a board or stone or something else. Here each spins an oval silken cocoon, and then, on the inside of the cocoon, it changes to a pupa, or chrysalis. Two or three weeks later it changes again from a pupa into a brown moth that lays eggs in clusters on the twigs. These eggs remain unhatched until the following spring.

These tent-caterpillar nests are readily seen. When small the nests and caterpillars are easily crushed with a swab of cloth on the end of a stick. Later the operation is a little more troublesome, but still easily done. This is really better than burning them, because the burning often causes many to fall to the ground and escape, and also often injures the bark of the tree. In orchards that are regularly sprayed with arsenate of lead for the codling-moth, these and other leaf-eating caterpillars will be killed.

Now for an Asparagus-Patch

By T. Greiner

MY ASPARAGUS has never failed, and it yields plentifully during its season, year after year. If you never had a patch of asparagus, you can hardly know how much you have been missing. Select your spot for a long row, say at least fifty plants eighteen to twenty-four inches apart, off one side of the garden. Make it rich. Dig it deep. And next fall or in early spring set good strong, one-year plants, which you can procure at small cost from a near nurseryman or plantsman.

Set them six to eight inches deep, gradually filling the furrow until on a level with the general surface. Keep free from weeds right along, cut no stalks the next season, and you will have a full allowance the year after! My own new asparagus-bed gave its first full crop last year. As it is just in a straight single row, several hundred feet long, it was an easy matter to keep it free from weeds by occasional violent cultivation with one-horse plow and horse cultivator, helping out with the hoe when needed. The next thing now is to pile on the manure, good old manure, and plenty of it, so as to stimulate the growth from now to the end of the growing season as much as possible, and get the plants in shape to give us a big yield of fat stalks next spring.

The Copenhagen Market Cabbage

By J. R. Bechtel

THE Department of Horticulture of the Pennsylvania State Experiment Station has during the past few years been carrying on extensive strain tests in a number of varieties of cabbage. Prof. C. E. Meyers, who has been in charge of this work, has secured results which will be of great benefit to the cabbage-growers of the country.

In this connection a new variety of early cabbage called "Copenhagen Market" was tried out. A comparative test was undertaken by Professor Meyers in 1912 to determine the relative yields of the best strains of Early Jersey Wakefield, which were determined in a previous experiment, and the Copenhagen Market. The results showed that the Copenhagen Market yielded over five tons per acre at first cutting, which was over a ton more than the best strain of Early Jersey Wakefield, a fact which no grower of early cabbage can idly pass by.

Copenhagen Market is just as early as Jersey Wakefield, has a large, round, hard, solid head, with a short stem. The average weight per head is about eight pounds, and, unlike Wakefield, it seldom bursts.

Professor Meyers thinks that the exceptional characteristics of the Copenhagen Market with respect to yield, size of head and quality place it foremost in the list of early cabbages, and that it will soon be regarded so by the growers of the country.

Live Stock and Dairy

Feeding Ewes for Milk Production

By J. Robt. Hall

FEEDING ewes to produce a sufficient quantity of milk for lambs is no easy task on the part of both the manager and the feeder of a flock of ewes to produce early lambs. The late lambs can easily be provided for if there is sufficient quantity of grass for the mother, but when the lambs come early and there is no succulent food growing and nothing to take its place the conditions are serious if the weather is severe.

Last spring we lost many ewes just on account of too much dry food and a lack of exercise, as little range could be provided in such adverse weather. The fetus grew, and the abdominal cavity became smaller near lambing-time. Then the lack of succulent food caused impaction of the lower bowel, and death ensued. Some that did not die before parturition took place brought small, weak or dead lambs.

The Ewes Had Little Milk

These weak ones were often hard to get to nurse, as the mother did not see the need of it and would not stand still for the operation, as she had little or no milk, and consequently there was no pressure in the udder to be relieved. Often the last resort was to take the little ones to the house or warm room in the barn and feed them a quantity from the bottle to strengthen them. Some of them never would be owned again, so the nourishment had to be administered in this manner till grass came or the lambs died, which happened in many cases.

If the mother has been fed and cared for properly, she will have a well-filled udder which when emptied by the lamb will be quite a relief, and she will be glad to let it nurse without resistance. This is the cause of fifty per cent. of the cases where the ewe will not own her offspring. To see such cases is very unsatisfactory and provoking, and often we blame the ewe when the blame should rest on the feeder. Often if she does own it she will not be glad to, and it will die if not exceptionally strong at birth.

Some Good Root Feeds

As to the feed, many have been successful without the use of a supplement for the grass, but better success has been attained where it has been used. The feed that will supplement the cooling grass that gives free action to the bowels and entire system is a root crop. Some of the best are the rutabaga, mangel-wurzel and the fall turnip. Of these probably the rutabaga is the most readily eaten, but on the other hand the mangel-wurzel is more easily grown and harvested. These must be chopped up well and fed on some smooth surface near the floor, as a sheep may become choked if fed from a trough too high. Each ewe may be allowed as much as four pounds.

Sheep fed on root crops do not require much water, but a little is necessary and should be available at all times.

Grain and Roughage

As to grain, each ewe should be allowed about one-half pound daily. Bran, oats, corn, oil-meal or some grain of their nature may be used, but corn should constitute a very small part of it, as it is a carbonaceous food producing fat, of which a small amount is desired. Yet the ewe must be in extra good condition just before lambing-time. Their appearance at this time is very deceiving, as they look full and rounded when they are really poor.

Roughage may be supplied by feeding clover, alfalfa or cow-pea hay. If the cow-peas have been cut when very ripe, less grain will be required, as the ripe beans will afford some rich feed, which is very much desired, in small quantities of course.

Feeding Points Worth Remembering

Fodder may be supplied in the ration, but should not be used to take the place of any of the legumes. It is very good to scatter in the field near by for them to pick over in order to get the desired amount of exercise. Corn-fodder alone will cause the production of small weak lambs and a small amount of milk; while on the other hand bran will produce large flabby lambs which will cause much labor pain at parturition and frequently the death of the lamb. A small amount of salt should be given at regular intervals.

Above all things have the quarters dry and well ventilated so the flock may not have wet feet or a wet coat. Cut away all tags before the lambs drop so that they may not experience any difficulty in getting their first meal.

At the time the lamb is dropped have the ewe to herself so the lamb will not be disturbed or lost, and the mother will be more likely to own it. Withhold the feed for a feeding period or so. Then feed her as before, only with a slight increase in the

amount. Give her all the exercise the lamb will permit her to take, but don't expose them to severe weather till the lamb has a few days' growth of wool.

In taking care of and feeding one hundred ewes each season we use the above method and get results which are pleasing. The results are much like the lambs shown in the illustration.

Many feed them on corn-fodder and depend on rye or wheat, but at the time that we need the latter most it is not available, and under such conditions I would advise the purchasing of the grain and leguminous hay if the best of success is expected. The



Lambs at market, bought at top prices

beets will not be on the market, but prepare to have them next winter by planting a patch this spring.

The Result of Inadequate Feeding

Owing to a lack of grain and hay with the proper nitrogen content and our hesitation when it came to paying the high price of a previous season for it, we received the following results: 120 ewes brought 148 lambs, saving only 43 of them. Sixteen of the ewes died. About all that the ewes needed was good hay in a sufficient quantity and the succulent food, the beets. After this disastrous affair we decided the only way we could make the sheep account show a balance on the credit side was to feed a car-load of lambs on cow-peas in the corn. This was done, and the sheep account showed a balance on the credit side of \$30.

Had we been wise enough at the time to have invested in a few tons of alfalfa our returns would have been much larger and our satisfaction greater. Sometimes our experience costs us a great deal so let us not fail to remember and profit by it each time.

Mares or Geldings?

By John P. Ross

IN NEARLY every business there are apt to be certain economies and sources of profit or loss which, seemingly from their very obviousness, are overlooked. On most farms some such lapses from intelligent management are to be found, and among them none is more productive of loss than the common habit of using geldings instead of mares.

It is quite certain that without an adequate amount of live stock it is impossible to obtain the best results from the cultivation of any description of soil; and it seems a platitude to say that wherever horsepower is required mares will be preferred by the intelligent farmer, since at very little additional cost they will, if put to breeding, add a most valuable item to the farm's live stock, at the same time doing its work as well and often better than geldings.

Light Work is Beneficial

Among those who have had but little experience in horse-breeding there is often to be found the idea that mares when bred are for a considerable period rendered incapable of performing their regular farm work. As a matter of fact, if due foresight has been used so that parturition shall take place after the heavy work of the farm is over for the winter, say in November or early December, the mare will be profitably employed in caring for her offspring until spring opens. Light work is beneficial rather than injurious to the pregnant mare almost up to the day of foaling. In careful hands she may even be used for any slow, heavy work to which she is accustomed to within a month of that time.

Love of Animals vs. Love of City

There is a good reason for saying that breeding of colts is a source of pleasure as well as profit. It may be regarded as a sentimental one, but it has a solid foundation of real value. Did you ever meet an American lad or lassie who could resist the charm of possessing and caring for a young colt if the chance was offered them? I have even known a bright little girl to be desperately fond of a small pig.

English farmers take advantage of this and leave the care and training of the colts, some of which are to be found on every farm over there, to the younger members of the family. They know that the love for animals thus encouraged does much to assuage the desire for city life, which, with us, amounts to a real danger to the country's welfare and is a problem still unsolved.

Curing Hams and Bacon

By H. F. Grinstead

THE average country bacon is not good enough for the most fastidious, yet an article much better than the average may be made at home by the farmer and house-keeper. When a hog is killed, the weather should be barely freezing of nights if this is practicable. It is a common practice to pick the coldest weather for butchering, when a light freeze will cool the meat sufficiently, and thus it is more pleasant to trim the meat the morning after. If extremely cold, the meat will have to be trimmed and salted at once before frozen. When trimmed, salt at once.

I have never found it necessary to weigh the meat, but mix the salt with saltpeter and brown sugar in the proportion of two pounds of sugar and two ounces of saltpeter to every ten pounds of salt. Rub each piece of meat well with this, and place in a box or on a table. In a day or two take it up and apply more salt, covering the flesh side of each piece with salt till it is white. If there is no cold weather sufficient to freeze the meat hard, it will take salt in three weeks, though if the weather is severe it will take longer. It may be tried by cutting one of the shoulders, which are usually eaten first. When taken out of the salt, it should be dipped in boiling water for half a minute, then hung and smoked with chips or corn-cobs. When smoked, dip each piece again to destroy the eggs of any insects that may have been deposited, then powder with borax, and put away in clean hay or shelled oats or ashes. Keep in a cool, dry place, and you will have bacon that will keep sweet a year. It is important that the meat is taken out of the salt in time and that it is kept dry. It may be kept in sacks hung in the smoke-house, but a dry substance like hay is preferred, as it takes up all surplus moisture.

When sausage is ground, it may be kept sweet till midsummer by frying till done and packing in jars, pouring melted lard over it. Do not use the grease in which it has been fried, since this contains some water and will cause it to become strong.

The soil ought to be a bank, not a mine; a place where we can make deposits in order that we may get interest. We can't get the interest otherwise.

Provide a box of dust for the hens when the ground is wet or frozen, and a little sulphur added to the dust will enable Biddy to take a sulphur bath at home.

Live-Stock Facts and Fads

By John P. Ross

IT IS sad to think of the number of speakers and writers who have become gray-headed while urging, with little apparent effect, the absolute necessity of live stock if the fertility of the soil is to be maintained. The simple truth that the corn and the oats and the hay pay best when carried off the farm on the hoof instead of in the wagon has met with but scanty belief up to the present time, and that the supply of humus cannot be maintained by artificial fertilizers alone has too often been regarded as a scientific fad fit only for the ears of the effete nations of Europe.

But a brighter day is dawning, for no man in his senses will now, in face of present prices, contend that he cannot afford to keep cattle and sheep on high-priced land, nor will the farmers of the corn belt or of the Eastern States be able any longer to plead that they cannot compete with the range men in feeding and breeding sheep and cattle. The "tables have turned," and the homesteader is rapidly turning the great free pastures into farms. It is certain, too, that the farmer who fails to keep a fair amount of live stock will be regarded as a back number, and his farm will be in danger of returning to the wilderness.

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The price of gasoline has taken a big jump. It is likely to go up again any day. The air is free and the supply is inexhaustible. No one can corner your source of power if you use an Aermotor for pumping water. The first cost of an Aermotor is small, the upkeep is almost nothing, the service is most satisfactory. Anyone who has used an Aermotor will never be satisfied with any other pumping device. It was the first steel windmill and has always been the best. Aermotor Galvanized Steel Towers are best, too.

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We have just issued a large hanger, 16 x 44 inches, on the above subject. It contains over 100 pictures of Aermotor outfits which have been pumping water for the farmers of one community for from 1 to 20 years. These pictures have been made from the finest lot of farm photographs that have ever been taken. If you will put up one of these hangers in your living room it will be the most talked about object there. It is 100 pictures in one and each individual picture shows a prosperous farm where the Aermotor is used for supplying all the water required. This hanger gives valuable information about the storage of water for household and stock purposes. You should certainly have one. It is free for the asking. Just one word "Hanger" on a postal card, with your name and address, will bring it.

Aermotor Co. Twelfth Street and Campbell Avenue, Chicago

Marketing

The Hog-Market Has an Upward Trend

By L. K. Brown

WITH March 1st the winter packing season closed, and it proved to be far from the normal. As a rule it is a period of heavy receipts and light trade, so that there is a heavy accumulation of stocks of meats. During the past winter, however, the supply was so light and the fresh-meat demand so insistent that almost nothing went into the cellars to meet future demand.

Receipts are Still Lagging

With the coming of spring, labor increases, especially in the South, where the idle negro gets busy in cotton-planting. This stimulates demand for food-stuffs, and pork, the cheapest meat, will receive a goodly share of this increased demand. To meet this there is almost nothing but the current supply. With this condition ahead, prices cannot help but work upward.

With every advance, the interests at the yards predict increased receipts, but they do not always materialize. The farmer does not sell unless his hogs are ready or he is in need of money.

Feeding operations are profitable and the market is stable, with an upward trend, so that the hogs are seldom sold before they ripen, even though at times the prices are very attractive. Even the usual run of renters' hogs previous to March 1st did not materialize. This policy of continued feeding has brought the average weight up until it is larger than that of the same period for the last two years.

Eastern demand continues strong for prime shipping weights, and this, coupled with the fresh-meat trade, maintains a premium on the two-hundred-pound hog. The relative large number of heavy hogs makes this class sell somewhat lower, but this does not deter the grower from feeding to the heavier weight, as his number of hogs is limited and there is good money in putting on this extra weight, even though the price realized is not quite so high.

At Chicago there is considerable demand for light-weight hogs to go back to the adjacent country for feeding purposes.

The Present Situation is Unusual

The present condition of strong demand from so many sources and but a moderate supply to care for it, and the low price of feeds, is an unusual one and comes but once in several years.

Still Some Blind Sheepmen

By John P. Ross

THE February markets closed with something of a lull in sheep, caused principally by large shipments from Colorado and Western States. March, however, opened up with very lively doings, as the following report for its second week, from the *Farmers' and Drovers' Journal*, shows:

	SHEEP		
	Top	Bulk	
This week	\$7.00	\$6.00@	\$6.75
Week ago	7.00	5.65@	6.50
Four weeks ago	6.00	5.00@	5.75
1912	5.65	4.50@	5.25

	LAMBS		
	Top	Bulk	
This week	\$9.00	\$8.50@	\$8.85
Week ago	8.80	8.15@	8.60
Four weeks ago	9.00	8.00@	8.75
1912	7.40	6.50@	7.00

The principal setback to the business will be found in the scarcity of sheep and lambs. This goes to show that feeders have strong faith in the near future of the market.

There are many complaints around the stock-yards of the number of in-lamb ewes that have been coming in for slaughter, and it seems strange that men can be found so blind to their own interests as to follow such a course, even if we leave the ethics of the matter out of consideration.

A Tonic for the Despondent

Wool remains quiet, but prices show no lowering tendencies. Shearing goes on slowly. Fleece wools are in good demand at from twenty-seven to thirty cents. Anxiety as to the tariff seems to have quieted down, and to be confined mostly to newspaper forebodings founded largely on imagination.

The English market reports should act as a tonic on despondent souls who dread the effects of the admission free of foreign meats. Over there, though millions of carcasses of sheep and lambs are admitted free from Argentina, Australia and New Zealand, yet, while they sell wholesale at from twelve to sixteen cents per pound, British lambs were eagerly taken on the hoof at from twenty to twenty-five cents. It is certain that if we will only take pains to produce the perfect goods—and we possess the means and the capacity to do it if we choose—our people, who will have the best

of everything, will not be behind the Britishers in supporting home-grown products.

Precautions in Feeding Lambs

It is seasonable to note just now that when sheep, and especially ewes with their lambs, are turned out from the yards onto pasture the young grass is likely to produce scouring. The advance of the lambs is likely to be checked, if no more serious evil is produced. In all young animals a falling back in condition at an early period in their lives is a heavy handicap on their future well doing, and if due precautions are not taken in time the injury is apt to become permanent.

Though it is very desirable to avoid the use of drugs, yet if scouring has set in to any extent it may be well to give small doses of Epsom salts or castor-oil, with a drop or two of laudanum; but the best way to avoid the need for this is to continue the grain and bran or oil-meal ration they have been getting in the yards, but on a scale reduced by at least one half.

There is real economy in this, for sheep and lambs respond most readily to a generous diet and may be relied on to well repay its cost. But, even in this, excess must be guarded against, for there is always danger in forcing young lambs too much. If, however, provision has been made of a few acres of mixed oats and peas, or of early rye, or still better of rape, a run of half an hour on it to begin with, which may gradually be increased to two hours, is very desirable.

The grain ration may thus be reduced and even discontinued, until it has to be resumed when the lambs are weaned and the pastures dried up. They should always be penned on forage crops, or they will tread down more than they will eat; and it is well to keep a lookout the first day or two for cases of bloating, though there is not much danger of it if the above time rule is observed.

Better a dollar by toil than a hundred by spoil.

Some folks seem to think fussing is hustling.

Legs were never designed to straddle questions with.

Cattle Prices are Askew

By W. S. A. Smith

WHEN little four-hundred-pound calves of fair quality are selling here in Iowa on the Sioux City market for \$7.35, and heavier eight hundred to nine hundred pound cattle are bringing \$7.50, it makes you gasp a little when you realize that steers dressing sixty per cent. are selling for \$8.30.

I want to tell you it takes a good steer, a good feed and a good feeder, to get that dressing. The difference between purchasing and selling prices is all out of proportion. I understand that the cattle sold at the Denver show averaged in car-lots \$7.75, even with freight paid to the river. This means \$8 cattle to go on feed. The best calves sold for \$12 per hundred.

Higher Prices are Looked For

The general opinion is that fat cattle must go higher. I wish I could make myself think so, as I've a good many on hand. As a matter of fact, the cattle dressing fifty-five to fifty-seven per cent. are high enough now.

The best beef is the cheapest to buy, but at present prices it doesn't pay to produce the best. The butchers say they get as much for the carcass of a cow as they do for the carcass of a choice steer after the best cuts are removed. The average American housewife knows only two parts of a "critter," a steak and a roast.

We are Outgrowing the Wasteful Age

They will know more before long if present prices increase. We have already got past the time when buffaloes were shot for the tongue and the hide, and we are fast getting past the age when the American working man can live on Porterhouse steak.

Cottonseed-meal is \$3 per ton cheaper than in the fall, and hay and roughage can be bought very reasonably. This truly has been a wonderful winter, and cattle have made fine gains for feed consumed.

I hardly think prices are high enough yet for tariff-reformers to get in good work. If fat cattle go to twelve cents and hogs to ten cents and the country begins to get hysterical, it would make a nice opening for a little bill favoring free beef. Such a thing is not improbable.



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"Four years, my son."
"Doesn't he get anything off for good behavior?"

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in the ration to aid digestion and make the greatest gain for every pound of feed consumed. 25c, 50c, \$1, 25-lb. Pail, \$2.50.

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Crops and Soils

When Nitrate of Soda Helps

By M. R. Conover

A WELL-ROOTED plant is helped by separate applications of nitrate of soda. The plant must use much nitrogen during its structural growth, previous to its bearing or fruiting period, and unless the soil be well supplied by nitrogenous manures or the remains of legumes the plant may lack a sufficiency at a critical time.

Nitrate of soda is expensive, and its application may be an utter waste instead of a lasting benefit. It all depends upon conditions. The extreme solubility of nitrate of soda makes it easily attainable by the plant if root and soil favor; it also favors its getting away from the plant if these factors are not working together.

The Best Time to Apply It

A heavy flooding rain and a powdery dry condition of the soil are alike unfavorable to its use—the one washing it beyond the root area; the other not favoring its immediate solution. The most favorable time to apply it is upon a normally moist soil, previous to a gentle rain.

In dry weather it is sometimes advisable to apply it dissolved, using one half an ounce to each pint of water and applying a half-pint to a hill, making a shallow furrow about the plant four or five inches from it.

Wait Until the Rootlets Can Use It

Under no circumstances must either the dissolved or undissolved nitrate of soda touch foliage or plant-stem. The undissolved soda may be applied about three inches from the plant at either side, on top of the soil or lightly covered.

Corn, tomatoes, cucumbers, melons, eggplant, turnips and squash, as well as lettuce, spinach and cabbage, are helped by one or more applications of the soda before the plants are of a size to produce. In the case of tomatoes just transplanted it is waste to apply the nitrate of soda at once. A week or ten days after resetting is soon enough. In that time the plant will have established itself, putting out fine rootlets, and can avail itself of the stimulant.

With corn an application when the stalk is two feet high, and again as it begins to tassel, is very helpful to the crop.

As a stimulant to grass it should be applied early in spring, when the weather favors immediate growth.

It is helpful to asparagus if applied just as cutting commences and at intervals of three weeks during the season.

In the case of melons and cucumbers it is very beneficial just before the vines begin to run.

Cabbage uses it to the best advantage just as it begins to head; early beets and turnips when about the size of marbles, and eggplants when the buds are forming.

Loss Through Inefficiency

By W. F. Wilcox

THE American farmer is losing money steadily through the production of meager yields per acre of the various crops he plants. Thousands of farmers are planting thousands of acres to crops and harvesting yields far below the average for the United States, and all know the average is small enough; while every one of our farmers, comparatively speaking, seems content with harvesting less than many of our foreign cousins do.

With the increasing value of lands as all the available land is brought under cultivation, something must be done in order to raise the annual returns per acre. No wonder that in many of the Eastern and Central West States farmers are leaving the high-priced land and seeking cheaper lands, for they are utterly unable to make a living, decent wages, interest on investment, keep up repairs and meet expenses on such high-priced land with so small returns.

Some Record Potato Yields

According to the statistics of the Department of Agriculture, the average farm value per acre of the following crops for the ten years from 1896 to 1905 was as follows: Corn, \$9.35; wheat, \$9.37; oats, \$8.32; barley, \$10.34; rye, \$8.08; potatoes, \$42.12; hay, \$11.62; tobacco, \$55.95; flaxseed, \$11.00; buckwheat, \$9.68.

Now these are very insignificant figures to be called returns from a year's work per acre. They are insignificant when we look at what has been done in this country. Take potatoes, for instance. The average yield per acre for the above-named period was 84.4 bushels, and the acre value \$42.12. Now it is very common in the irrigation regions of the West to produce 300, 400 and 500 bushels per acre. One man in my county here in Colorado grew 624 bushels. In 1891, at Del Norte, Colorado, R. A. Chisholm and R. C. Nisbet harvested 847½ bushels from a measured acre. In 1890, Mr. Sturgis at Buffalo, Wyoming, produced 975 bushels and

48 pounds on a measured acre. Of these, 838 bushels and 40 pounds were merchantable potatoes and 136 bushels and 8 pounds small and unmerchantable. The whole yield was sold for \$788.80, from which deducting \$74.80 for expenses left a net profit of \$714, quite different from the average for the United States of \$42.12.

There is no crop yield in this country but what can be doubled, and if the working people are to be able to secure the necessities of life at a moderate price consistent with their wages, the yield must be doubled.

Why is it that the old countries of Europe are continually exceeding our yields per acre on soil that has been cultivated for hundreds of years? We must eventually answer this question, and the sooner we do it, the better it will be for us.

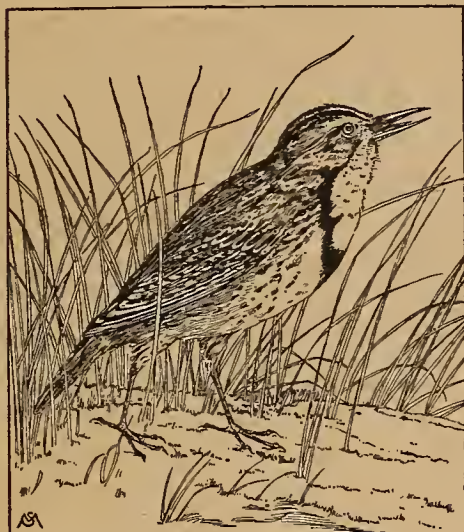
While our ten-year average—1900 to 1909—yield of wheat per acre was 14 bushels, Germany's was about 30, Austria's 18 and Hungary's 17½. France's was 20½ Winchester bushels and the United Kingdom's 33 Winchester bushels. The Winchester bushel is slightly larger than ours. Not a very pleasing showing is it, with Germany twice ours, and the United Kingdom a great deal more than that? The Agricultural Department divides the United States into six divisions when calculating yields and averages. But one division, the far western or irrigation region, has an average wheat production above the average for the whole United States. All the others drop below the average, though individual States in some divisions rise above the general average.

The Meadow-Lark

By H. W. Weisgerber

ONE Sunday afternoon in the closing days of March, when the sky was overcast and the air chill and damp, a small company of mourners were gathered at the grave of a dear grandmother, and, to conform to the simple habits of her life that had just ended, music and singing had been omitted from the funeral service.

But the universe is full of music. There is music celestial and music terrestrial going on at the same time; but only the sleeping infant when it smiles catches strains of the first, and our ears have become so hardened



by all manner of noises that we hear but a small part of that which is intended by nature for our ears of the second.

It was the heart of nature that furnished the music for that simple burial service, with the meadow-lark as soloist, whose flute-like notes wafted across a neighboring field; and my ears, perhaps, were the only ones among those of the small company that perceived nature's solemn requiem.

The meadow-lark's notes may sound sad to our ears, but they are the happiest love-notes that he knows, for his tribe have been whistling the same tune for ages and will, no doubt, continue them for ages to come.

It is impossible to estimate the value of this bird to the farmer, for: "Briefly stated, more than half of its food consists of harmful insects; its vegetable food is composed either of noxious weeds or waste grain, and the remainder is made up of useful beetles or neutral insects and spiders. Of the various insects eaten, crickets and grasshoppers are the most important, constituting twenty-nine per cent. of the food of the year and sixty-nine per cent. of the food in August."

Farthest North Cane

By C. Bolles

SO FAR white cane is acknowledged to be the earliest sorghum now in cultivation. It is being tried by practically all the experiment stations from the Panhandle up to South Dakota and has been found to be a fair forage-plant and a fairly good grain-yielder too. Grain yields have run all the way from nothing to forty bushels. On my Nebraska farm last season it made 14.8 bushels, while an acclimated variety of black amber yielded forty-six bushels. The purely grain sorghums reached just 23.3. Notwithstanding its low yield, white cane was the earliest of seventeen varieties tried out.

In appearance white cane is quite similar to the other ambers, excepting the glumes

and seed are pure white. It is dwarf, commonly growing to a height of five or six feet, though it may be yet shorter through adverse conditions or much taller. Last season mine reached eight feet and yielded forty bushels.

It would seem, although being grown more and more in western Kansas, that this variety would find its greatest use farther north than other canes could be grown. Through the real sorghum belt, however, white cane will be at home in that it can be planted as a catch crop so late in the season that either milo or Kafir would be hopeless, from a grain standpoint.

The Road

By Berton Braley

I SING you an ode
Of the country road,
The lumpy road
And the bumpy road,
That jolts the wagon and spills the load.
Mud to the hubs when the rain comes down,
Flooded wherever the creeks run high,
Filled with ruts when the fields are brown
And the sun is hot and the air is dry.
It's clogged with gravel and packed with sand,

So built and graded and laid and planned
That it takes a team,
And sometimes two,
To do the work one horse should do.
It racks the wagons with jolts and jars,
It ruins horses and motor-cars,
Keeps back crops from the market-place,
Piles up debt on the farmer's place—
The old-time road is a plain disgrace.
But the modern road is a different thing,
A worthy theme for the bard to sing:
Put together
For every weather,
Smooth and dustless and good to see,
And graded right, as a road should be;
Useful always and muddy never,
A thing of beauty—a joy forever.

Alsike for Wet Land

By H. F. Grinstead

ALSIKE will grow on land that is too wet and sour for red clover, and with timothy makes a good feed. Stock do not relish it as they do red clover when green, but eat it readily when cured. Being a perennial and producing seed every year, alsike will never need reseeding. Sow about six pounds of alsike seed to the acre. I have sown it with timothy in the spring the same as red clover. It will even grow on ground too wet for timothy; then redtop and alsike make an excellent combination.

Alsike possesses advantages over red clover in being adapted to wet ground, but where red clover will grow well the change to alsike would not be advisable. It is more like white clover in blossom, and furnishes excellent bee pasturage.

Some of my neighbors made the mistake of sowing alsike on a large scale before trying it, but found in some instances that it would not do well on fairly good cloverland. On dry, gravelly land where red clover has made good crops the alsike proved poorly adapted, yet on the wet land it yielded bountifully.

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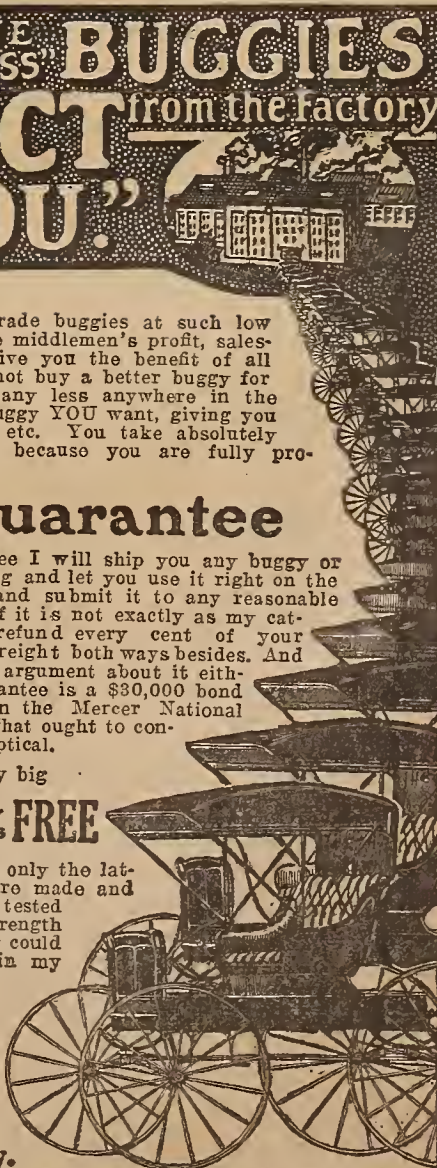
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Raise Cauliflower with Cows

By W. H. Jenkins



HAVE you heard about cauliflower-culture in the southeastern part of Delaware County, New York? The general cash crop on the dairy farms in other parts of the country is potatoes but the cauliflower growers get as high as \$500 net per acre for the use of their land, while the potato-growers are doing well if they get \$100. Being in the vicinity of a locality which is the center of the cauliflower business in the county, I took some pains to inquire about it.

I learned that on some days during the best of the season that five hundred barrels had been shipped from one railroad station, that one grower some years had grown ten acres as a side crop on his dairy farm, and that cows and cauliflower had proved a good combination. The cauliflower often more than paid the grain-bill and hired help, so the receipts from the dairy herd were net profit.

A Visit to a Cauliflower Farm

The largest grower, and pioneer in the cauliflower industry of Delaware County, is William Van Benschoten. I was told that he began several years ago in a small way, found a market for them in New York City and realized a good profit. His neighbors saw that his cauliflower-growing was more profitable than his potatoes, and they tried an acre or two. The fact that many have gone into the business and stayed in it seems to prove they are well satisfied. I visited Mr. Van Benschoten's farm about the first of last October and found him cleaning up a field of cauliflower he was cutting. A large amount had been trimmed and packed in barrels ready for shipping. I said, "Mr. Van Benschoten, how late do you ship cauliflowers?"

"Sometimes up to the middle of October. I begin about the middle of August. I have shipped every day since that time."

"When is the market the best?"

"Just after the Long Island growers have disposed of their early crop, which may be early in August, but one must study the market for years to know just when to place the bulk of the crop on the market to realize the most for it. I grow both the early and late crop and take my chances on averaging well."

"How do you grow plants for the early crop?"

"I sow in hotbeds the last week in March,

always a standard strain of the best early varieties, which I use for both the early and late crop. The seed costs thirty dollars per pound, and I estimate one-half bushel per acre. The hotbeds are managed in the usual way, but seed should not be sown too thick, and the soil should be kept moist all the time. When the plants are well up, they should not be forced too fast, as it tends to make them spindling and tender. Give them plenty of air, and try to get stocky plants. Harden them off well before transplanting to field."

"When do you sow seed for the late crop?"

"As soon as the soil is in condition to work in the spring. These plants are more reliable, as the early plants may 'button' and fail to head. The early plants are more of a lottery, but as the price is considerably higher I take the risk."

Cauliflower as Part of a Rotation

"How do you prepare the soil for transplanting?"

"Usually sod ground is heavily top-dressed with stable manure in the winter, the same as for corn, except a little more manure is needed. In fact, the cauliflower can be grown as one of the crops in the usual rotation on the dairy farm of ensilage-corn, grain and grass. The manure is not lost growing the cauliflower crop, as it puts the soil in ideal condition for the grass-seeding



The leaves are tied over the heads to whiten them

and great crops of clover can be grown, and the clover again makes the soil right for another cauliflower crop. Some growers seemed to have more clubfoot with stable manure and are using some commercial fertilizers, but the question of stable manure causing clubfoot has not been well settled. The stable manure has the advantage of adding humus to the soil. The ground is plowed early in the spring and a fine plant-bed made by thorough harrowing. I begin to set plants from the hotbed when about four inches high."

"Have you set the plants by hand, or with a transplanter?"

"I use one of the large horse transplanters, and can set two acres of plants in one day."

"How do you cultivate after transplanting?"

"The culture is the same as for cabbage. I run the horse cultivator both ways, for the plants are set in check-rows about three feet apart, and very frequently, so as to keep the soil well stirred. In time of drought a dust mulch forwards their growth. Cauliflowers should be kept growing all the time without check."

"I understand you blanch the cauliflowers to whiten them?"

"Yes, when the head is three or four inches in diameter, the leaves are tied around it with twine. The head will be ready for cutting in about one week, some-



A trimmed cauliflower ready for packing

times less. In good growing weather the head will have made its growth and blanch and be ready for cutting in less than ninety days after transplanting."

Packing Them for Market

"How do you trim and pack them for market?"

"The leaves are cut smoothly within an inch or two of the head so as to make an attractive appearance. Then they are packed in barrels which have been specially made for this purpose by a local factory."

"How do you sell your crop, and where is the best market?"

"I ship to commission merchants, because I cannot depend on grocers to handle a large shipment. I have found the best

market in New York City. The Jews are good customers at certain times of the year, and the consumption is increasing. People prefer to eat cauliflower in place of cabbage when the price is not too high. Probably the business could be overdone so there would be no profit in it for the country growers who pay freight and commission, but the demand is likely to grow as the taste is educated to eat them in preference to cabbage and coarse vegetables."

"What have been your gross receipts for an acre of cauliflower in ten years?"

"From \$300 to \$600; probably the average has been fully \$400. To this amount can be added the value of the refuse and culls for feeding cows."

"What are the usual cash expenses of growing one acre of cauliflower, itemized?"

"Seed, \$15; commercial fertilizers, if purchased, \$70; two tons of lime used to prevent clubfoot, \$12; barrels, \$40; total, \$137."

"The cost of fertilizer is much less than the above amount if stable manure from the farm is used, as the larger part of the plant-food in the manure is left for the crop which follows."

Mr. Van Benschoten told me further that with his acreage, which is larger than most dairy farmers will wish to grow, he uses considerable high-grade commercial fertilizer with the formula of 4-8-7.

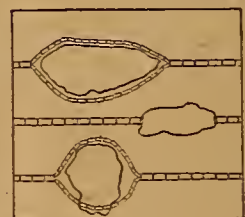
I went to another farm where the owner keeps about twenty cows and grows between one and two acres of cauliflower, with no more help than is needed for the dairy farming, and no bill for fertilizers. He had bought barrels, but said it was not necessary, as some farmers were shipping in crates they made in winter or on stormy days, so the actual cash cost of the crop is for seed and lime, and even lime may not be needed on old sod ground where there is no danger of clubfoot. His sales per acre had been close to \$500, and besides he had a large quantity of culls and trimmings he was feeding his cows. The net receipts from this farmer's cauliflower crop was sufficient to pay the grain-bill for his cows.

Cauliflower can apparently be most cheaply grown on a dairy or stock farm, where the manure can be utilized for it. The same plows, harrows, cultivators, wagons, manure-spreaders and tools needed for the general work of the farm can be used for the cauliflower, and the only extra equipment is a hotbed and possibly a transplanter.

The fact should be kept in mind that there is only a limited market for cauliflowers, and they are more of a luxury than staple articles of food. These Delaware County growers have proved that a considerable quantity can be sold at fair prices, usually from two dollars to four dollars per barrel, in large cities, and under such conditions their culture can be made very profitable.

Overcoming Slough Holes

By George W. Brown



WE ARE aware that there are hundreds of acres of slough-lands lying upon our farms that might be made productive if properly drained. Many such slough-holes have stood for years submerged in water and covered with swale grass, and the gummy subsoil renders such places almost beyond proper breaking up and preparing for crops, hence are quite unproductive until properly drained and fertilized.

Our experience with these low mucky swales has been that they are of but little use without drainage. When once drained and fertilized with potash salts, they are our most productive soils.

One Practical Solution

Some of these slough-holes are quite difficult to drain, owing to depth and inability to get drain tiles through them.

We have solved this problem quite satisfactorily in several instances where the sloughs were not too large, by plowing and turning the soil toward the sloughs to fill them.

In other cases we have scraped dirt into these sloughs from the adjoining high lands, and gained a very productive soil as well as removing the nuisance and loss of farming around them.

Where they are of such a depth that one outlet does not permit of thorough drainage through the bottom, we have run our drain up from below, forking just below the slough, then encircling with two lines of smaller tiles and merging them again into one line above the slough as shown in the sketch.

A Sensible Precaution

Our aim is not only to drain as much water as possible from the slough, but to catch all water from the higher lands surrounding it before it descends into the lower levels and fills up the slough.

In this manner we have drained such sloughs upon our home farm in Ohio, and are now growing crops of corn. These soils were badly water-logged and seemed dead, but since drained and fertilized we find the soil breaking up with more life each year.

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Our Illustrated Silo Book

is full of valuable information for stock feeders and dairymen. It is written by authorities and should be read by every farmer. Send for free copy today—ask for catalog J.

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WHOOP-LA! We're not going to die of starvation! The sun isn't "going out." The ocean isn't drying up. The soil isn't ceasing to produce. Rather it's producing, year by year, more and more per acre. Cost of living is soon going to drop like the enthusiasm of an original Wilson man when another chap gets the post-office.

Which latter observation isn't at all true, but is good to put in at the beginning because everybody knows it isn't and therefore may be excited enough to follow along and see how big a lie is coming.

Anyhow, these remarks are by way of some defense of the American farmer and his methods of farming. We have a class of economists and a coterie of scientists in this country who derive most of their amusement from abusing the farmer; telling how inefficient he is; how he tried to farm too many acres, and what a sorry failure he makes of it; objurgating him for his omission to do it "intensively," which means that they think he ought to hoe his corn by hand instead of using a riding cultivator. It all sounds good, and it would be good, if these typewriter experts and swivel-chair scientists would do the hoeing. There's nobody else to do it; unless the job is attended to by the lazy and inefficient and wasteful man who uses the cultivator, it will not be attended to at all.

Acre Yields are Going Up

IT SEEMS that, lazy and inefficient as we are, we keep on raising more stuff all the time for the critics to worry over. There are run-down farms, abandoned farms, unprofitable farms, and all that sort of thing. But the fact sticks out from all the statistics that the average acre of ground in this country is producing more and more, and that what it produces is worth very much more, year after year. This is true not only of the United States, but it is true of nearly all the States, and of most of the civilized countries of the world.

For twenty years past the tendency in all the leading crops has been toward steadily increasing yields per acre. Take corn. I have before me the February bulletin of the government crop-reporting service, with a set of tables and diagrams made to show this tendency. They indicate that in 1890 the country's average yield of corn per acre was twenty-three and one-half bushels per acre. It has fluctuated since then, with good and bad seasons; but the tendency has been steadily upward, and in 1912 the average reached twenty-seven bushels, the highest it had known to that time.

Wheat shows a like experience. In 1890 it was a fraction below twelve bushels average per acre; in 1912 it got up to a fraction above fourteen bushels. The increase was steady and persistent.

Oats in 1890 averaged a trifle under twenty-five bushels. In 1912 they just topped a thirty-bushel average per acre.

Potatoes went just a bit over seventy bushels per acre in 1892. Then they climbed upward till they were ninety-six bushels in 1912.

Barley increased its average yield from about twenty-one and one half to twenty-five and one half between 1890 and 1912.

Rye made the greatest proportional gain, going up from eleven and three-fourths to sixteen and one-half bushels in that same interval.

Buckwheat rose from thirteen to over nineteen bushels in the same period.

Hay went up from 1.2 to 1.4 tons per acre.

Some Silly City Folks

ALL this means something. It means, among other things, we are getting more out of the soil without any revolution in farming methods than we used to get. It's perfect rot to converse about "intensified" farming in the way a lot of city folks do it. They know so much that isn't so! I've met 'em at dinners, and heard people who never saw a farm except when the train jolted and woke them up and by mistake they looked out of the Pullman window—I've heard those erudite people tell about how the damnation of farming in America was the overdevelopment of power machinery. They think in all seriousness that because the government corn contests have developed the fact that one hundred, one hundred and fifty, two hundred and more bushels

Who's Pushing Up Land Prices?

By Judson C. Welliver

can be grown on an acre of ground, with closest care and the most ample fertilization of selected tracts, therefore it's proved that we are all incompetent because we don't raise that much or something like it on all the acres. Gracious me, if everybody set about to raise one hundred bushels of corn per acre, and all the people now raising corn stuck right at the business, there wouldn't be enough corn to make whisky for a prohibition national convention—not as compared with what we now raise. Why? Because a man would put in all his time raising one hundred bushels per acre on five acres or less, instead of raising forty bushels an acre on fifty acres and thus raise just a quarter as much.

Let's Pat Ourselves on the Back

REMINDS one of seeing a cow sell for \$1,000, and figuring that if we would all raise none but \$1,000 cows we'd all have Cræsus looking like a salted mining project that had been denied the use of the mails. But the difficulty is that if we all raised \$1,000 cows, there wouldn't be any more \$1,000 cows. They'd be too common; and at that there would be so few cows that milk would be as rare as radium.

The truth is—and this is where I venture back to the statistics again—that we're doing the best farming we can under the circumstances. Not all of us; not every individual; but in the aggregate we are making a given amount of human effort go farther toward raising crops than any other lot of farmers in the world ever did. The trouble is that we have too many acres to farm, and have to farm too many acres, for the number

THIS problem of the city farmer is a big one in the East. It would be useless to deny it. He musses up the price of eggs and of acres alike. Broadly speaking, he makes land worth more and agriculture worth less. But the big fact remains that he is chiefly responsible for the big increase in the price of New York State real estate in the last ten years.

The day will come when he will learn a good deal of sense about his own farming, and also when he will help the rest of us to do better. He is willing to spend money "doing stunts" in our various neighborhoods, by which we will all profit. He will not care much if he loses a bit on his peaches or prunes or eggs; he will try out a lot of experiments that his neighbors will know all about, and in the end they will benefit just as much as he will.

of hands we have to do it with. We must use horses and gang plows and riding cultivators and the like in order to make a respectable dent in the job. Just as fast as the increase of population and its demands press on us for more results, the land will be cut into smaller holdings, the people will be drawn from other occupations to the soil, and the yields per acre will go up. But that can't happen until there are more people to do the work.

Here are Figures That Will Surprise You

MEANWHILE, we are informed from time to time by pessimistic people, our methods are ruining the land. Wrong again. They're improving it. The figures show it, and these are not the figures of liars.

It seems, for instance, that the "worn-out" farming sections of the country really are making the best showing. There are no worn-out sections. There are sections almost deserted; but the tide has turned back toward them. They are being resettled. Farm lands in New York showed, between 1900 and 1910, an increase in value per acre for the first time in half a century. Ditto in New England.

Not long ago a middle-western friend chaffed me about whether my Maryland farm "produced enough to pay for the fertilizer." That's a favorite joke among middle-western people, whereby they show how much they don't know about agricultural possibilities East and South. Another way they have of demonstrating the same innocence is by selling their mid-western farms and moving off to Saskatchewan and Manitoba, when they would do ten times better to look up the cheap-land possibilities of neglected parts of this country.

To this western friend and his little joke—he didn't know how very old or bad it was—I made reply that I would bet him the dinners for the gathering there and then present that Maryland corn averaged a bigger yield

than that of Iowa and that New York's averaged higher than Indiana's. Everybody laughed. Looking up the figures next day, I got these figures from the December, 1912, Crop Reporter on average yield of wheat per acre in 1912: Maryland, 15.5 bushels per acre; New York, 19.5 bushels per acre; Indiana, 14.7 bushels per acre; Iowa, 16.4 bushels per acre.

Wheat, then, showed New York leading, Iowa second, Maryland third and Indiana fourth. Next I looked up corn; it showed: Maryland, 36.5 bushels per acre; New York, 38.5 bushels per acre; Indiana, 36 bushels per acre; Iowa, 31 bushels per acre.

Wheat, then, gave Maryland a strong lead over Iowa and placed New York in the lead of them all. Both eastern States led both western States.

When I told my friend about it, he sniffed and demanded:

"All right; but is your Maryland corn worth enough to pay for the fertilizer it takes to raise it?"

He dropped the argument when I explained that we don't fertilize with commercial fertilizer for corn in Maryland.

All this illustration is by way of suggesting that there isn't any "worn-out soil" in these Eastern States.

Why the City Farmer is Your Friend

THERE'S plenty of worn-out agriculture; not soil. But it isn't because the farms are bad; it's because agriculture is a decadent industry in these eastern communities. People are pulled away from it by the towns and by the lure of the West. They go to the Panhandle of Texas in preference to New York; to Canada, rather than to Maryland. But there's no excuse for it, and they wouldn't do it if they knew. All over the country, East and West, North and South alike, the tendency is toward larger yields per acre year by year.

Proof that the people are turning this way is found in the Agricultural Department's report that in the decade ending 1910 the average value of farm lands in New York showed an increase. That is true generally in the East. The people are realizing the chance.

In New York the average value of farms per acre was \$45.89 in 1870. It dropped by 1880 to \$44.41; fell still farther, to \$44.08, by 1890, and in 1900 touched the low census figure, at \$39.21 per acre. Then observe the upward tilt that brought it to \$53.78 in 1910! Not a big increase compared to the experience of some western States; but a mighty big one when it

is realized that it represents the reversal of a steady sag that had been going on for forty years. These figures, be it explained, are for farms with improvements. The statistics of farm-land values, without considering improvements, show that the average value for the whole State even now is only \$32.13.

Agriculture in the East is going to be divided, in the next generation, between gentlemen farmers and truck-farmers. The gentleman farmer is one of the reasons why it will be profitable to own land, and unprofitable to farm it, in the neighborhood of the great cities. I know one of them. He has a poultry-farm and points with pride to roosters that cost fabulous amounts. He has about four thousand hens, that lay eggs which cost perhaps \$1.25 per carat. The owner of the farm doesn't know what they cost. He doesn't have to care. He makes enough money in town to care for the deficit. Three miles from this gentleman farmer I have a friend who is a real farmer. He also raises poultry and expects to make a profit on it. He has to meet the competition of the rich man who doesn't care whether he loses money or makes it.

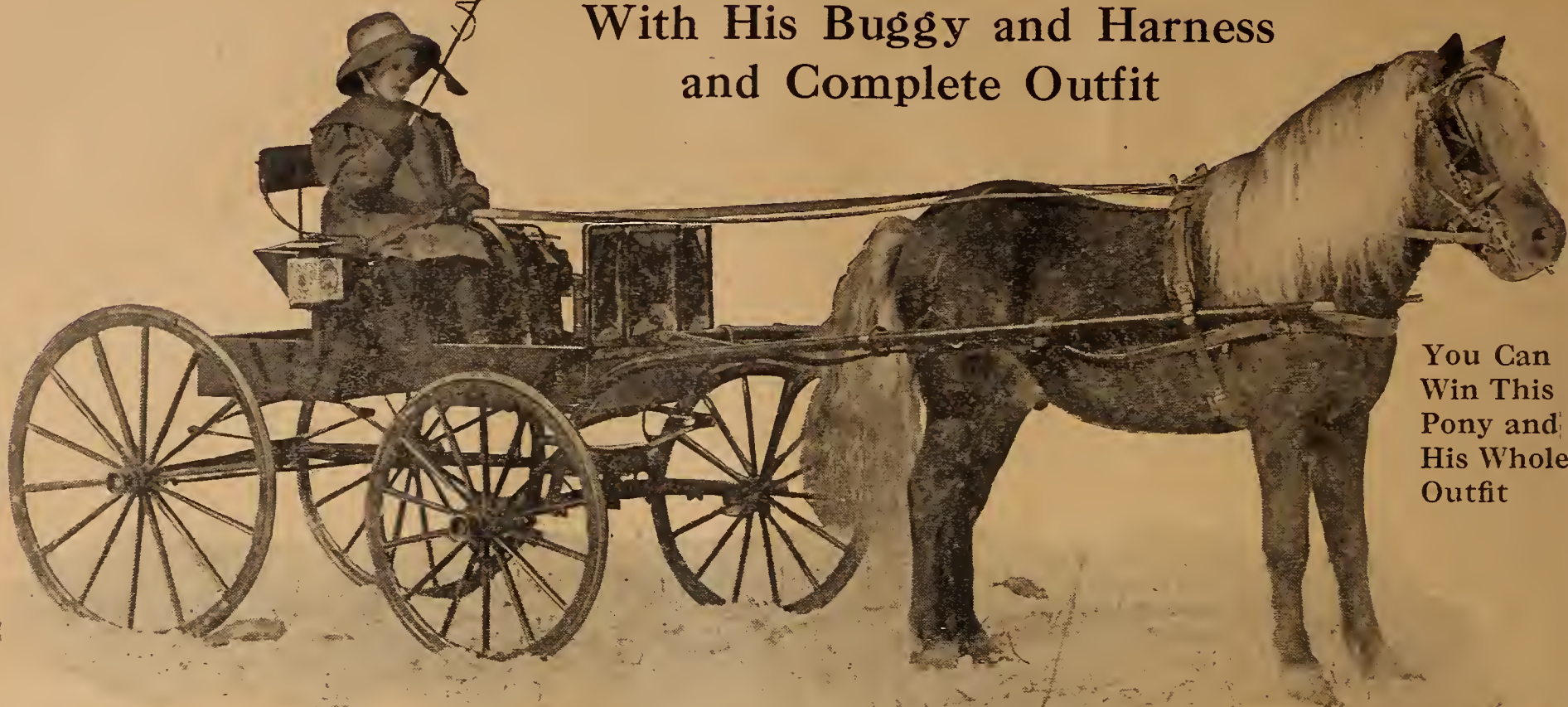
Look at Both Sides and You'll Agree with Me

MY FRIEND, the real farmer, who is trying to make money in the legitimate poultry industry protests that it isn't fair to expect him to compete against the rich man who, in the same business, doesn't care particularly whether he makes money or not.

There's a good deal in it, but there's also another side to it. The rich farmer paid a fancy price for his land. He had a friend who also paid a fancy price. In the long run these city farmers are bad competition in raising milk and eggs, but they certainly do help to push up the price of land. They are the ones who are paying good prices for farms, improving them and raising the value of farms all around them including your own.

Do You Want to Win "Duke"?

With His Buggy and Harness
and Complete Outfit



You Can
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His Whole
Outfit

This Pony Will be Given Away to Some Boy or Girl

THIS remarkable Pony Offer is open to all FARM AND FIRESIDE boys and girls. The Pony Man is going to give away "Duke" and his handsome outfit to some boy or girl. You can be that lucky boy or girl if you try hard enough. With "Duke" you will receive his handsome buggy and harness complete. What splendid fun it will be to go driving every day this summer. How you will enjoy taking your friends for a drive to the neighboring farms, to the village or out to a picnic. My how your friends will wish they had a pony like "Duke," but they can't have one so good because he is the pick of the finest pony herd in America.

About "Duke"

"DUKE" is a genuine Shetland pony and he is the most beautiful pony you ever saw. He is chestnut in color with soft hair and the silkiest, fluffiest mane and tail in the world. He can travel faster than lots of horses, but he is just as gentle and kind as a kitten. He just loves children too. "Duke" is about 42 inches high and weighs 350 pounds. He is not very big, but he more than makes up in spirit what he lacks in size. "Duke" has a splendid disposition and is absolutely fearless. He is surely a prince of playmates—just full of fun and life. This is the best chance you ever had to get a Shetland pony, and you ought to jump at the chance. *We are going to send "Duke," together with his handsome outfit, right to the very door of the child who wins him, and pay all charges.*

WITH "Duke" the Pony Man will also send the beautiful buggy and harness shown in the illustration. Never was there a more elegant and stylish pony outfit than this. It has been made to order, especially for "Duke." The buggy is a handsome four-wheeled piano-box affair with whip cord seat and cushions, nickel trimmings and rubber tires. The harness is a dandy, of the very finest leather with highly polished nickel trimmings. You could not find a more handsome outfit if you traveled this country from coast to coast. The thing for you to do right away is to send your name and address to the Pony Man.

Read How to Win "Duke"

ALL you have to do to win "Duke" and his buggy and harness will be to get enough of your friends to read the FARM AND FIRESIDE. That should be very easy because everybody who knows about FARM AND FIRESIDE likes to read it, and your friends will be glad to help you win such a handsome prize.

For the boys and girls who do not win "Duke" there are two other beautiful Shetland ponies. This year FARM AND FIRESIDE is going to give away three pony outfits to its boys and girls. You surely can win one of these handsome prizes. Just start to-day and hustle.

Do This To-day

JOIN the Pony Club. Write your name and address below and send it to the Pony Man to-day. He will at once send you a Membership Certificate blank, pictures of "Duke" and all the other ponies. He will also tell you how to become a full-fledged member of the Pony Club right away.

You have just as good a chance as any other boy or girl to be the owner of "Duke" and his handsome pony outfit. Once you are a member of the club, you simply can't help being a winner.

**Act Now!
Don't
Wait!**



This is "Colonel," the Second-Prize Pony

Three Fine Ponies and Outfits Five Hundred Grand Prizes

DON'T let anybody persuade you that you can't win "Duke" or one of the other ponies, because our plan of giving away ponies makes it possible for children who live in small towns and the country to have ponies. We have already sent ponies to children in almost every state in the Union. Send in your name to the Pony Man to-day sure. Besides Duke and his splendid outfit, the Pony Man will also give away two other handsome ponies and outfits and more than five hundred Grand Prizes. Just think of it! You can't lose once you join the club. Every Club Member is guaranteed a Prize. So don't wait, but start to-day. **Hurry!**

THE publishers of FARM AND FIRESIDE guarantee that every boy and girl who joins the Pony Club will receive a square deal and will be handsomely rewarded for joining the club. The first thing to do is to send the below coupon to the Pony Man or write your name and address on a postcard, which will be just as good. The Pony Man will then know that you want to become the owner of "Duke" and will send you full details explaining just how to win "Duke" and the other ponies, or one of the other Grand Prizes. Act promptly and you will be thankful for it all the rest of your life.

How to Join the Pony Club

YOU are sure to win a handsome prize, if you become a member of the FARM AND FIRESIDE Pony Club and you will not have to invest a cent of your own money. FARM AND FIRESIDE is one of the oldest and best farm papers. You are absolutely safe in accepting the promise of such a big well-established paper. Besides "Duke" and his complete outfit, two more handsome ponies will be given away to the second and third best members of the Pony Club. Also 500 elegant Grand Prizes and thousands of dollars in cash will be distributed to the lucky club members. You will be surprised at how easy it is to win one of the FARM AND FIRESIDE ponies. **Hurry up and send in your name to-day.** Don't wait. Just as soon as you send in your name and address, the Pony Man will tell you how to become a member of the FARM AND FIRESIDE Pony Club. Remember it will not cost you a penny to join and you will not be under any obligation to do a single thing.

The Pony Man, FARM AND FIRESIDE, Springfield, Ohio

Mail This Pony Club Coupon To-day
The Pony Man, Farm and Fireside, Springfield, Ohio
Please send me by return mail Membership Certificate in your Pony Club.
I wish to learn how to win "Duke" and wait you to give a place for
me in the club. I will try to help FARM AND FIRESIDE all I can
and be a good member of the club.
Name.....
Town.....
R. F. D.
State.....

Making the Most of Things Around Us

By Jessie Field

THIS week I am writing to you girls, not from the country that I love so well, but from the very center of the biggest city in the United States. Somehow I have been wishing all week that you girls could all see New York City so you would know how good it is not to have to live in such a place. Now, of course, there are many great people here, and there are many people here who would not want to live anywhere but in a big city, but that is hard for me to understand. Just think, there are no trees, excepting in the parks—just great stone buildings and stone streets. I am not going to stay here long, and I guess it is a good thing, for I feel now as though I would just hug an ear of corn if I should see one.

One day when I was walking down Fifth Avenue—that wonderful street on which so many millionaires have their homes—I stopped in front of a very attractive florist's window. Many other people were stopping too. In the midst of the expensive orchids and American Beauty roses in that window was something which seemed to be appealing to them all. And what do you suppose it was? Just pussy-willows in birch-bark baskets. And, do you know, those beautiful natural things were bringing tears to the eyes of some of those men and women. One white-haired old lady with beautiful mink furs had such pretty brown eyes and looked so long at the pussy-willows in the basket that I dared to speak to her, and I asked, "Why do you care so much for these?"

As she turned to me, I expect she saw all at once that I liked them too, and she said with such a sad smile, "They used to grow along the brook on the old farm where I lived when a child, and my brother and I used to put them in birch-bark baskets just that way."

The Real Things

And I went on, but later when I passed the same window people were still stopping to look at the pussy-willows. How soft and velvety and gray and "just like spring at home" they looked. Of course you girls love them, and you love the violets and the anemones and the apple-blossoms and all the common things that grow around you. And just treasure this in your heart, that the things which you have around you in your lives in the country are the things that bring real joy to all people. Riches, pleasure of the world, luxuries—nothing can take the place of the simple blessings that God has given us in the country. They are the real things. May all of us country girls have the vision to understand what this means.

In that window, too, were some tulips. I wonder if you have any tulips or snowdrops or hyacinths in your garden this spring? They are among the very nicest things to grow, and they blossom so early in the spring. Tulip-bulbs are quite inexpensive. I think I like best just the common single tulips in assorted colors. They blossom early and are very hardy. Once I put out a large bed of parrot tulips, and I liked them too, for they were so odd with their ragged leaves.

Tulips must be planted before the ground freezes in the fall. Get the ground good and mellow, and then put the bulbs in so there is about as much earth over them as the bulbs are thick through. It would be a pretty good thing to cover them over with leaves, but this is not necessary. In the spring, before the snow is really off, the brave blossoms, so bright with their crimson and gold, will push through. The plants live from year to year too, and if you will take the trouble to re-set them, your bed will grow larger each year.

What Tulips Meant to One Boy

In Page County, Iowa, each country school set out a tulip-bed, and some schools put with them narcissi and hyacinths too. In one school the boys brought an old rim of a wagon-wheel and made a circular bed. Then they put stones around that. It made a very nice bed, and they were proud of it, especially when the tulips were in blossom. I have always believed that people who love flowers are almost sure to be good, and this proved itself to me in the case of one boy.

He was a boy who hadn't had much chance to become good through his home influences. And so he swore and used

tobacco. His teacher was worried about this, for of course she could not have such things at school. But Jack was such a good-hearted boy that she talked with him about it carefully and tried to make him understand just why it was wrong, and he said he would try never to let anything of the kind happen again. He did try until one day things went wrong in a game of ball, and Jack swore. The teacher called him in to the schoolhouse and said to him, "Jack, I have told you how wrong it is to swear. It is no use to talk to you. I wonder what I can do?"

Jack looked at her so straight and said, "Well, I wish you'd lick me and lick me hard if you think it would do any good, but somehow when I get to playing ball and get mad I just forget every time."

Well, when the tulip-bulbs came to this school, Jack was the one who superintended the planting of them. Each pupil claimed one of the bulbs for his own, and they made a fine, big bed. In the spring when I went to that school the tulips were in blossom, and they could hardly wait to show them to me. They were back of the schoolhouse. Jack tied my horse, and we hurried around where they were—all of us. And I'll never forget Jack's face as he threw himself down on his knees beside that tulip-bed with his straw hat on the ground beside him and the morning sun bringing out the gold in his tousled hair as he reached over and took hold so tenderly of a great red tulip and said, "This here one is my tulip. Don't you think it is the reddest of all?"

As I saw the reverence in his face for these beautiful flowers, I was not surprised when his teacher told me afterward

that he did not swear or use tobacco any more. No boy or girl can really love beautiful things and still have room for things that are impure in their hearts.

Three Kinds of Reverence

In a school conducted in a mountain valley in Europe thousands of years ago they taught the three R's. This was not reading, 'riting and 'rithmetic as some of our fathers and mothers knew the three R's, but the three kinds of Reverence: first, reverence for God and the things of the spirit,—"the things above" they called this course; second, reverence for the things below, that meant everything that grew around them, and, third, reverence for the good in all mankind.

In this beautiful springtime when everything is waking to a new life around us may you know in your own lives what these three kinds of reverence mean. I think if you have a garden of your own this year it will help you to understand about it. At any rate, while the year is at the spring, may you, my country girls, understand the value of making the most of the things around you. I have in my possession a basket made of long-leaf pine-needles which I prize very much. It was made by a little colored girl in Alabama. She had nothing to work with, she thought. But she looked around her and saw the long pine-needles under the trees; then she thought of the pieces of cotton threads that were waste around the cotton-mill in the neighborhood. She tied these pieces of thread together, gathered the pine-needles and made with them beautiful baskets. So may you, too, learn to value that which you find around you.

PROCLAMATION

Of the Return of the Spirit of Ruskin to the Earth.

AN OBLE influence is beginning again in our land. It is the power of the deathless Ruskin. The name of this teacher will appear in the story of many an eminent citizen—day after tomorrow.

Ruskin was called "the greatest gladiator of his age." His jeweled sword, drawn for beauty and righteousness' sake, shall flash again. It shall make a thousand conquests in the dominion of the soul.

The new Ruskin gladiators speak a language that would, perhaps, vex him. They may violate his dogmas and run counter to his Victorian limitations. But they fight against the same powers of darkness.

And their souls within them have the same changeling makeup. For the soul of this gladiator was but that of an elf unexpectedly equipped with a giant's armor and resolution. He had the thunder of Moses in the mount at his command. It was no mere phrase when Carlyle called him his "ethereal one." To Ruskin the death of a lily was a crime, the slaying of the green grass a massacre. He toiled for a thousand whims. Each whim, when closely looked upon, was to make England more like fairyland. Through his valor many a corner of that England is clean and decked with a delicate splendor.

Yet he had the soul of a monk. He could renounce, and renounce even that beauty which was his heart's blood, in order that holiness and mercy be brought to the weary. The last half of his life he turned his back on all his former standing and broke his heart trying to bring uncounted blessings to men. The serene art critic became the burning economic prophet, and took the prophet's portion of scorn, and won the prophet's ultimate authority.

He was a Shelley, with the power of prayer and poetical achievement. He was a Shelley not only able to speak for beauty, but to live it perfectly and dramatically through all his years.

Like Charles Martel hammering the Saracens at Tours, like Miltiades pursuing the Persians at Marathon, or Patriarch Nimrod driving the great beasts of the plain, he drove the powers of darkness before him in many a battle, and would not acknowledge defeat.

By the valor of his returning sword we shall have on every highroad the beginning of elfin beauty, we shall have the beginning of justice and mercy. The foundations of the Church of the Open Sky, the Church of the Rose of Sharon, the Church of the Living God, shall more splendidly appear because of this law-giver from Fairyland.

This, by faith, and a study of the signs, we proclaim!



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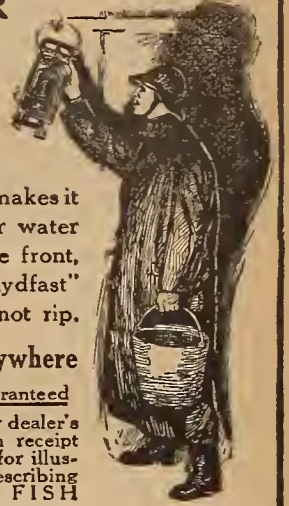
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The ADVENTURES of a BENEFICIARY

by W. J. Nichols
Illustrated by W. C. Nims

Characters of the Story

EMERY WRIGHT, a young city man whose claim to his Uncle Nathan's fortune depends upon his successfully managing a Revolutionary relic in the shape of a man-propelled river ferry in New Hampshire. In his ignorance he is persuaded by "Chicken Smithers" to buy six "mated pairs" of chickens. They are "Alderneys" and "Holsteins." A large Shanghai rooster has a bantam hen as an affinity.

While Wright is sketching he is attacked by an angry "cow" that chases him across a field, and through this episode he learns that cows are sometimes bulls.

PETE, a half-witted youth, who seems to "come with the ferry." Later Emery Wright learns differently and has to deal with Pete's uncle, who demands wages for Pete's services.

MISS LANSING, a young lady whose parents have a summer residence close to the hereditary ferry. She meets Mr. Wright on his first trip across the ferry. He falls at the same time into love and the river. He rescues himself and the ferry and then determines to learn to swim.

MR. DODD, the attorney, who makes known to Mr. Wright the terms of his uncle's will and who is to give the nephew any necessary legal advice.

HAL LOMOND, who is also in love with Miss Lansing, and who is the owner of a red car.

MRS. HUTLEY, a middle-aged woman, knocked senseless by Wright, who mistakes her for a thug.

When Emery Wright arrives at the ferry, his adventures begin. This is a continuation of them.

Chapter XXIV.—Primitive Justice

IT WAS with a feeling of relief that the ferryman heard the clock strike five, the hour of his engagement with Lomond. He slipped the little lantern into one coat-pocket and the piece of stained cloth into another, the proceeding being watched by the Dentist with red and covetous eyes. Pete was bidden to hold himself in readiness for ferry duty, and Wright strode off at a good round pace with the Dentist following him.

Where Lomond earlier in the day had come upon Wright, the latter discovered his rival, who had cast himself down upon a stretch of dusty roadside turf. When he beheld the ferryman, he sprang to his feet, pulled off his coat and tossed it behind him.

"I thought you'd never come," he said with an oath. "Now you're here, let's get to business!"

"I'm on time," Wright retorted. It flashed upon him that for a gallant who had begged a little indulgence on the score of expectation of lingering joyously in a certain blissful presence Lomond had been strangely prompt at their tryst, and his pulse quickened. "I'm ready too," he added, "except that I must have a word or two with you first."

"Oh, cut out the oratory!" Lomond said impatiently. "Time and place suit me: quicker the one and nearer the other, the better. And if you're hedging and trusting to an apology, it's too late, I tell you!"

Wright ignored the taunt, but a spot of red showed on either cheek.

"Lomond," he said sternly, "I'm here to thrash you, and I'll do it if I can. But I won't go into this thing under what you might call false pretenses. Now, I'm not apologizing, understand, but I am going to tell you that when I hinted to-day I could send you to prison I may have been mistaken. Did you ever see this before?" Wright drew the lantern from his pocket.

"It's mine—belongs with the car," Lomond said. "Missed it a week ago. So you stole it, eh?"

Wright's color heightened, but he kept his temper. "That lantern," he said, "was found near my barn just after somebody tried to burn the building. Half a dozen people saw it and identified it as yours."

"Good Lord!" Lomond cried. "You don't think I'm a blanked fire-bug, do you? The lantern was stolen, I tell you. You find the thief, and you'll find the villain that tried to burn your place!"

"I'll be open with you; that's my notion too," Wright told him. "It happens I've more or less of a clew—enough, anyway, to give you the benefit of a reasonable doubt."

Lomond's face brightened perceptibly. "Oh, I accept the apology—" he began, but Wright stopped him.

"You'll have to extract it first," he said. "That's no apology; it's a statement. We've got plenty of other reasons for a fight."

The declaration affected Lomond strikingly. "We're wasting time; get out of that coat!" he shouted and clenched his fists.

Wright needed no urging. He slipped off his jacket, dropped it in the ditch, and was surprised to see the Dentist, who had crawled up in the course of the dialogue, lose no time in settling down beside the garment. The little incident touched him even on the verge of battle; for it betokened a loyalty to his interests he hardly had expected in so recent an addition to the ferry staff.

As a fight the combat that followed made up in variety what it lacked in adherence to the rules of the squared circle. In weight Lomond enjoyed a slight preponderance, while in reach the advantage lay with Wright. In knowledge of boxing the ferryman was out-classed, but in training the odds were all his way. Lomond was puffing even when, after a brief exchange of blow and parry, he landed a resounding left-hander squarely on Wright's forehead and scored a clean knock-down.

The ferryman scrambled to his feet, somewhat dazed a good deal surprised and thoroughly aware of the need of a change in strategy. He had no difficulty in avoid-

ing Lomond's next rush, though the blow he aimed at his passing adversary missed its mark. He was very cool and determined to win the fight at all costs. His head was clearing, and his breathing was hardly quickened, thanks to the out-of-door existence he had led at the ferry; and common sense rather than any knowledge of pugilistic tactics suggested the desirability of wearing his enemy out. Wherefore, there ensued a period of dodging, feints, dashes and retreats that carried the combatants across the road, into the ditch and almost over the Dentist, up the bank, then back into the road again, and then in a series of zigzags along the highway. Twice they came to a clinch with fierce though ineffective infighting; but each time Lomond broke Wright's hold and strove vainly to land a swing that would end the battle then and there. He was in distress now, blowing like a porpoise and wasting breath, moreover, in exhortations to Wright to come on and fight like a man. And then, when he attempted a fresh charge, a stone slipped beneath his shoe, and he stumbled. Wright's chance had come at last. He caught his adversary about the waist and bore him backward till he lost his footing and fell heavily in the road.

"Got enough?" the ferryman demanded. "You're taking this—say when!"

Lomond's thick body wriggled desperately. The fist vanished from before his eyes, but a heavy hand closed upon his throat.

"Got enough?" he heard repeated, but now the words sounded faint and as if from a distance.

"Ye—yes." It was torn from him in his extremity and was uttered in a gasping whisper. Lomond felt a sudden relaxation of the strangling pressure upon his windpipe; then, strangely enough, he heard voices raised in anger, and mingled with them the rumble of a big dog's growl.

Lomond turned his head cautiously, a little painfully, perhaps; but what he saw was sufficient to make him raise himself on an elbow and stare at a bewildering change in the players and the action of the drama. He was just in time, indeed, to behold Zeb Simonds lunge at Wright, contemptuously parry a counter, and then go down in a heap, when a raging, tawny creature flung itself at his throat and dragged him to earth.

Lomond tottered to his feet and cautiously approached the fallen man. He was lying motionless as a log, for close to his head crouched the Dentist, his big teeth bared and glistening, and his red eyes fixed upon his prey, awaiting the movement which should be the signal for renewed attack. Wright took from his coat-pocket the piece of cloth, torn and stained, and with this in hand he came back to the center of the current activities.

"Look at this. Lomond," he said quietly. "Here's an exhibit that interests you as well as it does me."

Lomond followed the direction of the other's glance. "I—I—what is it?" he said, still somewhat short of breath by virtue of recent strenuous exercise. "Why—why—it matches!"

"Yes, it matches," Wright replied, "matches not only in pattern, but also corresponds in general dimensions, as you'll observe, with that plainly recent patch upon this gentleman's trousers."

"That—that's so!" Lomond agreed. "But—but what's that to me?"

"Only this," Wright explained: "my dog, I'm fairly certain, secured this sample from the wardrobe of the person who fired my barn the other night. And from the solicitude he's showing I fancy the dog's fairly certain of the point as well."

Five minutes later Zeb Simonds picked himself out of the dirt and glared vengefully after a man dragging a reluctant and protesting dog along the highway. He staggered to the fence and for a little clung to its topmost rail, as if the support were welcome. Then a fist swung, and he swore a mighty oath.

"I'll get even with you!" he shouted hoarsely. "You doubly blanked murderin' dude, I'll get even with you if I swing for it!" and no listener would have been deceived regarding his sentiments.

Chapter XXV.—A Last Wile of the Enemy

THE precipitancy with which Wright dashed from the ferry-house could only be explained by the sight of Noddy and the cart and Noddy's mistress before his door. He said some commonplace things very rapidly and perhaps incoherently and extended a hand, in which, after the slightest of pauses, the girl laid hers.

"You wish to cross the river, Miss Lansing?" he asked.

"No; this is not a business call, Mr. Wright," she said. "When we met the other day, I fear I may have given you a—a—a wrong impression about—oh, about how Father and Mother felt, don't you know? And they wouldn't wish you to think them prejudiced—oh, not for worlds! And, as I was driving by to-day, it occurred to me you ought to know."

"You're kindness itself," Wright said, "except that—well, except that I haven't seen you for ages."

"Or, to be exact, for two days," she corrected. "It has been very dull. I haven't seen Mr. Lomond for two days, either."

"I yield him my sympathy, but not my good wishes," Wright said promptly.

The corners of Miss Lansing's mouth quivered. "I hardly think he seeks either," she said. "At least, he didn't seem to yearn for them in a note he sent me yesterday, though he did refer to you. Frankly, Mr. Wright, there has been gossip—and about you—that distressed Father and Mother; and Mr. Lomond knew they'd heard it, and he wrote to say that it wasn't true. There were reasons why he shouldn't call in person, but—"

"I understand them!" Wright said hastily.

"It was a stupid story, but it was splendid of him to contradict it," she said quickly. "Hal Lomond's a spoiled boy, but he's good-hearted. I've known him forever, and he's a—a—a very dear friend of mine."

"Oh!" said Wright. Friendship, even very dear friendship, was not the thing which caused him alarm. "And the story? If it isn't asking too much, may I know what it was? That would be fair, I am sure."

The girl reached a swift decision. "Mr. Wright, it is



"Chasin' the constable! Lordy, but how Nathan would have enjoyed that!"

fair you should hear it," she said. "It's about—it's about somebody who's at your house—who has been there, and may be there now."

Light burst upon the ferryman. "Somebody is there, Miss Lansing," he said. "But don't you know who it is? Haven't you inquired?"

"Why should I, Mr. Wright?" the girl asked with spirit.

"For no reason—or for every reason," he said. "But I'll tell you without the asking. It is Mrs. Hutley; and she's here because I mistook her for a thug, and struck her with an oar, and knocked her down, and raised a lump on her head as big as a cantaloup. I couldn't let her roam the country that way, and so she agreed to stay in the house and keep out of sight. Then she felt interested in cleaning us up, and there has been a riot of soapsuds ever since. I suppose somebody saw the sweep of skirts and started a line line of gossip. I'll call her. Oh, Mrs. Hutley!" he concluded in a shout.

The lady in question appeared in the doorway. "Howdy, Miss Lansing?" she called genially.

"Why, Mrs. Hutley, I'm delighted to see you!" the girl answered, and there was a truthful ring in her voice that added zest to the remark.

Wright's countenance was illumined by a smile. "What an afternoon for a row!" he said. "Let's take the skiff and drop down to the island—you've never been there, you know. And Pete can look out for Noddy and the ferry. Why, the program couldn't be better!"

"It is alluring," the girl confessed. She smiled radiantly, but with an air of indecision. "But we mustn't have any adventures, you know."

"I make no promises," Wright insisted. "When a fellow's a hereditary ferryman, things just can't help happening."

"Did they happen to your uncle?"

"My uncle, as I'm informed on all sides, was a very remarkable man. But you can hardly have known him very well."

"Better than you imagine, perhaps. We often visited my cousins before we took a place here, and of course I knew him. His was an unusual personality. One couldn't but be interested."

"Yet you've failed to mention the most notable thing about him. Do you know, of all the people here I believe you are one of two who haven't told me he always wore boots? I suppose there has been a general notion I'd have difficulty in filling them."

It was a somewhat silent pair of voyagers that set out in the ferry skiff. Wright rowed slowly, barely drawing his oars through the smooth water, while his companion watched the shining bubbles that lazily floated away on the current. Thus they crossed the nearer shallows to the channel, where Wright swung the bow of the boat down-stream, toward the island between its flanking lines of foaming rapids. At the change of course the girl looked up.

"I need hardly have been apprehensive of accident to-day," she said. "The river never has seemed in better humor. It's in no mood for adventures."

Wright's oars dipped deeper. "The river may have the moods it pleases," he said. "I can't agree with them, though. I'm in the midst of hope of adventure—my great adventure!"

She caught his look, but would not hold it.

"There's something floating, to the right," she said swiftly and not too steadily. "Perhaps adventure is coming to meet us."

Wright cast a glance over his shoulder. "Box, isn't it?" he said carelessly, as he changed the boat's direction. "We'll sheer over and make an inspection. A single stroke shall suffice—behold!"

Deeper dipped the oars. The ferryman threw all his strength into a mighty heave. And then, indeed, adventure rushed to them; for with a sharp rending of wood their craft seemed to fall apart, one section here, another there, while the water poured in through a dozen yawning gaps.

"Saved!" Wright gasped. In the instant that elapsed before he went overboard he made out the fresh, clean-cut edges that told of some enemy's work, and the thin layer of splintered wood that showed how the plotter had left the boat a very shell, ready to break under the first unusual strain.

The ferryman, coming to the surface, struck out for the spot where the girl was floating, buoyed, as he supposed, by her skirts. Except for a single startled cry, she had uttered no sound, and she appeared to maintain her courage wonderfully, as under his direction she placed a hand upon his shoulder.

"Don't be alarmed! Don't struggle!" he told her, though the caution hardly seemed required. "Trust me! I'll bring you safely to shore. See! We're keeping up beautifully."

Indeed, Wright's natatorial accomplishments, though self-taught and very likely lacking the finish of the schools, were standing them in good stead. For a little he naturally paid more attention to keeping afloat than to direction of course, and by the time he had acquired confidence on that point the current had swept them some distance down-stream, and by so much nearer the dot of land, for which they had been bound. Observing this, Wright was seized by inspiration.

"We'll make the island; they sha'n't cheat us of our excursion," he said. "If we can't get there one way, we will another. Don't mind, do you?"

"Oh, not in the least!" she answered, as tranquilly as if they were on dry ground and he had proposed the briefest of strolls. Such confidence filled him with jubilant delight. With such sweet encouragement he could swim miles and miles, he told himself; and he threw an energy into his stroke which a more experienced swimmer might reasonably have held in reserve. As a result, he was beginning to tire, when Fortune was kind, guiding him fairly upon a shoal projecting twenty yards up-stream from the island's end. Hand in hand they waded to the sandy beach.

It was the quietest of islets, this bit of earth in the midst of the river. They were in solitude as complete as heart of lover could desire. Presently, it was to be presumed, Pete, notified of their predicament, would hasten in the scow to the rescue; but for a little the island was theirs in uncontested tenancy.

Wright was breathing hard and fast, but there was a tremor in his voice not to be explained by his achievements as a lifesaver, and his one thought was that he must put his fate to the test.

"May not this be my—our—yes, our—great adventure, dearest?" he said.

Drooping lashes hid the girl's eyes. "Why an adventure?" she said lightly. "You swim very well—not quite so well as I, though!"

Wright's face lengthened. "You swim?" he asked incredulously. "Why, you didn't take a stroke!"

"Can't you see—can't you know why I—why I might prefer some—someone else to save me, rather than to save myself?"

Chapter XXVI.—Mr. Plummer Says the Word

MR. DODD looked keenly from Mr. Emery Wright, hereditary ferryman, to Mr. Matthew Plummer, executor of the will of the late Nathan Wright, deceased. "And so, Mr. Wright, I take it there is a crisis in the affairs of the ferry," the lawyer said.

The young man nodded emphatically. "There is a crisis," he said. "That's why I felt I must meet you and Mr. Plummer here to-day. I desire to marry."

Mr. Dodd's face was freed of the frown it had worn for some minutes. Mr. Plummer cleared his throat.

"Well, why don't ye?" he inquired succinctly.

"For the excellent reason that if I am to have a wife I must first be able to support her. The ferry doesn't pay expenses. I haven't minded pork and beans and oatmeal mush for myself, but she is going to have something better. No, I'm not going to kick about the ferry—I've had fun enough, and I'm a new man physically—but it doesn't offer the way to a living income. You see, the only thing I know—my trade, if you'd rather call it that—is drawing pictures. What I'm trying to arrive at is this: I'm bound to the ferry. If you insist, I'll stick to my contract to run it, though the tolls and the rent from the quarry will never be enough to pull me out; but, if there's any other way, won't you tell me how I can keep my agreement and yet have a chance to marry the dearest girl that ever was in this world?"

"What you askin' us for? Ain't we tother side?" demanded Mr. Plummer.

Wright glanced from executor to counsel. "You may be the other side, but I'm hoping you're the friends of mine I believe you are!" he cried.

Mr. Plummer pulled out his handkerchief, blew his nose and winked a keen old eye at Mr. Dodd. "Soft soap and solder, David. And yet—and yet—I dunno but it's about time."

"Matthew!" Mr. Dodd said with conviction, "if you request my advice, professional and personal, this is the time to a second!"

Again Mr. Plummer cleared his throat. "You didn't know your Uncle Nathan," he said to Wright, "but he knew you. Oh, yes, he did. He'd looked you up, he had."

Wright brought down his hand upon the desk. "Just a moment, Mr. Plummer. There was an old man in town last winter. He appeared friendly, and, by Jove! he wore boots. But I never suspected—"

"Twas him—Nathan!" Mr. Plummer broke in. "Keepin' tabs on you, he was. He liked you, only he thought you was kinder triffin' and easy-goin', and so the question was, was it you or the bringin' up you'd had that was to blame? So he fixed it up to give you a chance at the ferry among real folks with the bark on. He sort of figgered out how he'd make sure you'd try it." Here Mr. Plummer's eyes twinkled. "He left it to me to see how you got along, and if them folks was goin' to ride rough-shod over ye. Well, you've held your own, near's I can see, and kinder reached over for more. Fact is, you've done some things Nathan himself wouldn't have risked. You ain't let any dogs bite you for a sheep—not twice. I reckon if Nathan himself could hear that tally of lawsuits he wouldn't think you was no mollycoddle."

"No, Matthew; Nathan may rest easy on that score!" Mr. Dodd put in.

"Well, it's for me to say—they was Nathan's instructions," Mr. Plummer remarked thoughtfully. He looked at Wright, and again his eye twinkled. "I say the word, David!" he cried with decision. "You tell him what it means."

"It means, Mr. Wright," the lawyer explained, "it means that Mr. Plummer, as executor and trustee under the will of your uncle, Nathan Wright, is now prepared to put in your hands a sum of money—a large sum, I may say; more than sufficient to warrant your invasion of the state of matrimony—it having been established, to his satisfaction, that you are not a person who will weakly submit yourself to be downtrodden or overridden by others. Had you failed to meet the test of the ferry, the fund would have been divided among certain institutional charities. As it is, I take pleasure in wishing you long life, prosperity and every enjoyment of Uncle Nathan's fortune."

[THE END]

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ONE YEAR'S TRIAL

Our Boys' and Girls' Page Conducted by Cousin Sally

DEAR COUSINS: The buttonhole and kindling contest which you were
asked to take part in is over, and the prizes have been awarded.
It has been a great pleasure examining the work patient girlish fingers made.
Why, dears, some are almost like embroidery, putting me in mind of the quaint
New England maiden who did such exquisite mending and darning that her
folks took to cutting holes and rents in their dresses and aprons and stockings.
The kindling letters were perfectly splendid. I never really doubted that boys
could plan ahead, but if I had, these letters would have shown me that farm boys
are just filled with definite, practical ideas.
FARM AND FIRESIDE is proud of the efforts of her boys and girls.
Lovingly, COUSIN SALLY.

Prize-Winning Letters from Our Girl Cousins

THE first
button-
hole prize
goes to Violet
Parkes, an eleven-
year-old eastern
lassie who
sent in an ex-
quisitely worked
buttonhole with
the following
nice letter:

DEAR COUSIN
SALLY—My mama
thought I made
such nice button-
holes that if I
tried real hard I
might receive a prize. I enclose my button-
hole and hope you will be pleased with it.
I have belonged to your club for a long
while and always read your page and enjoy
it. Just now Mama is away from home, but
she sent me your column. I think it is a
splendid offer, and I hope to please you.
Your loving cousin, VIOLET PARKES.

The second prize goes to
dear little six-year-old
Constance Finch, who pa-
tiently practised until she
worked a beautiful button-
hole and sent it in with the
following letter her dear
mama wrote for her:

DEAR COUSIN SALLY—I am a
little girl six years old. I am
sending you a buttonhole I
made without any help. Mama
wrote for me, as I can't write
with a pen very well.
Your little cousin,
CONSTANCE FINCH.

Little Mildred Harbaugh,
who was awarded the third
prize, writes:

DEAR COUSIN SALLY—I am a
little cousin nine years old.
Mama has taken FARM AND
FIRESIDE for a long time. I
like to read the Young Folks'
Page.
I walk two miles to school,
and I am just beginning the
fourth grade. I like to sew and
help Mama with the housework.
Your loving cousin,
MILDRED HARBAUGH.

The fourth prize in the
buttonhole contest was
awarded to Edna Robertson. She writes:

DEAR COUSIN SALLY—We take FARM AND
FIRESIDE. I like the letters from the boys
and girls. I have two kitties and a chicken
for pets, and a pretty black and white rabbit.
I am seven years old. I have never been
to school, but am going this fall. I will send
a buttonhole that I made all myself.
Your affectionate cousin,
EDNA ROBERTSON.

The fifth prize goes to Dorothy Eliza-
beth Lewis, who is five years old, but
not too little to help her mama with the
housework. This is what she
writes:

DEAR COUSIN
SALLY—I am send-
ing you a button-
hole I have made
all myself. I am
only five years old
and can make my
doll dresses and
wash dishes and
cook.
I like to hear
Mama read the
cousins' letters.
With love,
DOROTHY ELIZA-
BETH LEWIS.

Answers to Puzzles
Mr. Smith's Horses—1, black; 2, chestnut; 3, gray; 4, white; 5, roan; 6, bay;
7, sorrel; 8, pinto.
Animals Seen on a Farm—1, sheep; 2, swine; 3, jack; 4, lamb; 5, donkey; 6, cow;
7, steer; 8, dog; 9, goat; 10, mule; 11, calf; 12, colt; 13, cat; 14, ox.

Prize-Winning Letters from Our Boy Cousins

THE nine-year-
old boy, Har-
old Green, who
won the first
kindling - letter
prize, writes:

DEAR COUSIN
SALLY—I would
like to write you a
little story to tell
you how I get my
kindlings. I go
back on Saturday
or pleasant nights
after school and
carry dead sumach
up to the house.
I saw it up, and
then I get my lit-
tle ax and split it
up quite fine. I cord it up
in a dry place. I try to keep some ahead.
I am nine this month. I go to school. I
like my teacher. Your cousin,
HAROLD GREEN.

Forest Valentine takes the second prize
with the following letter:

DEAR COUSIN SALLY—I think
the best way is to gather your
smoothest boards of wood to-
gether. You want your ax or
hatchet good and sharp before
you start in. It takes dry wood
to make good kindling. Take
some fine day and split it up:
the finer you make your kind-
ling, the less it takes.
When you come to some real
hard stick, say, "Look here,
Mister Stick, we are playing a
game now," and keep on chop-
ping, and you see if he don't
come in two.
I am a boy twelve years old.
FOREST VALENTINE.

Third prize letter:

DEAR COUSIN SALLY—I find
the best way to have plenty of
dry kindling is to chop it on
nice warm days and store it
away in the dry for cold stormy
evenings.
Your eleven-year-old cousin,
RALPH RICHARDSON.

Fourth prize letter:

DEAR COUSIN SALLY—This is
how we get kindling in Florida:
Father and Brother and myself
take the big cross-cut saw to
the woods and saw down a
tree, and then saw the logs
into blocks sixteen inches long.
We then haul them to the wood-yard, where
we have a chopping block about two feet
long buried in the ground with six inches
sticking out.
The blocks for kindling-wood are placed
on end on the chopping-block. An old ax
we use for a splitting-wedge is held on the
top of the block, being driven into the wood
by a heavy maul. My father or older brother
uses the maul while I hold the ax. I am
eight years old. Your cousin,
SELDEN BENNETT.

Fifth prize letter:

DEAR COUSIN SALLY—I ride in a school-
wagon four miles, and when I get home I run
into the house, take off my school
clothing and get into my working
ones. Then I run
out into a field
and pick up a big
armful of short
sticks.
Sometimes I get
out of the school-
wagon on the way
home and pick up
some along the
fences. In winter
I chop some at the
wood-pile.
Your cousin,
NATHAN SCOTT.

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has also departments devoted to poultry
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and raising fowl that mean success. It
is edited by the best authorities on
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Drawings by Miss Savage

IN ORDERING WOMAN'S HOME COMPANION patterns be sure to always send to the pattern depot which is nearest your home. By doing this you will be assured of a more prompt delivery of your patterns. The pattern depots are: Pattern Department, FARM AND FIRESIDE, 381 Fourth Avenue, New York City; Pattern Department, FARM AND FIRESIDE, Springfield, Ohio; Pattern Department, FARM AND FIRESIDE, 203 McClintock Building, Denver, Colorado.

IN PLANNING your clothes for the spring and summer bear in mind the fashionable outline of the figure. Straight lines are favored—narrow skirts, small sleeves and a comfortable natural waist-line. Draperies and tucks add a soft note to the new skirts which are sometimes plaited or slightly gathered at the waist-line.



No. 2269—Low-Neck Blouse:
Sailor Collar

32 to 44 bust. Quantity of material required for medium size, or 36-inch bust, two and three-fourths yards of twenty-two-inch material, or one and five-eighths yards of thirty-six-inch material, with three-fourths of a yard of twenty-seven-inch material for collar, cuffs and girdle. Price of pattern, ten cents

No. 2260—Panel Waist:
Turn-Down Collar

32 to 42 bust. Quantity of material required for medium size, or 36-inch bust, two and three-fourths yards of twenty-two-inch material, or one and three-fourths yards of thirty-six-inch material, with one-half yard of contrasting material for collar and cuffs. Pattern, ten cents

No. 2261—Four-Gored
Skirt with Tunic

22 to 32 waist. Quantity of material required for medium size, or 26-inch waist, eight and three-fourths yards of twenty-two-inch material, or six yards of thirty-six-inch material. Width of skirt at bottom in medium size, two and one-fourth yards. The tunic is gathered at the back and reaches just to the sides of the plain front gore which forms a broad panel. Pattern, ten cents



No. 1881—One-Piece
Dress

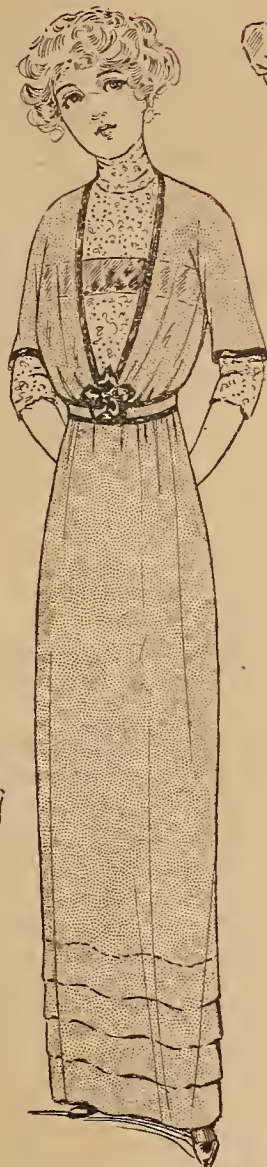
32 to 48 inch bust measure. Quantity of material required for medium size, or 36-inch bust, seven and one-fourth yards of twenty-seven-inch material, or five and five-eighths yards of thirty-six-inch material. Developed in any gingham, madras or chambray this dress is extremely practical for the first warm days. The collar and cuffs may be made of contrasting material and scalloped at the edges. The pattern provides for the long, close-fitting sleeves which are shown in the back view illustrated on this page. In addition to the comfortable, round collar there is a standing collar which fastens at the back. The waist and skirt are joined by a narrow belt and the dress closes in the center front under the plaits. Pattern, ten cents



No. 2260



No. 2261



No. 2268—Tailored Waist
Tucked in Groups

32 to 48 bust. Quantity of material required for medium size, or 36-inch bust, three and three-fourths yards of twenty-four-inch material, or two and three-eighths yards of thirty-six-inch material. To add to the smartness of this good-looking but plain waist, use bright-toned buttons. Price of pattern, ten cents

THE new spring and summer catalogue of WOMAN'S HOME COMPANION patterns has just been published. If you need any help in choosing your new spring and summer outfit or in remodeling your old one, be sure to order this catalogue. Its price is four cents, and it may be ordered from any of our pattern depots, addresses of which are given at the top of this page. It is filled with new designs and will be found most useful to the woman who makes her own clothes.

No. 2249—Waist with
Kimono Overblouse

32 to 40 bust. Material required for the overblouse for 36-inch bust, one and three-eighths yards of thirty-six-inch material, with two and three-eighths yards of twenty-four-inch material for the waist, and three-fourths of a yard of ribbon four inches wide. Pattern, ten cents

No. 2250—Straight Skirt
with Deep Tucks

22 to 30 waist. Material for 26-inch waist, three and three-fourths yards of thirty-six-inch material. This is an excellent model for thin wash fabrics. The lower edge is straight and the tucks and deep hem can be pressed flat. Pattern, ten cents



No. 1881

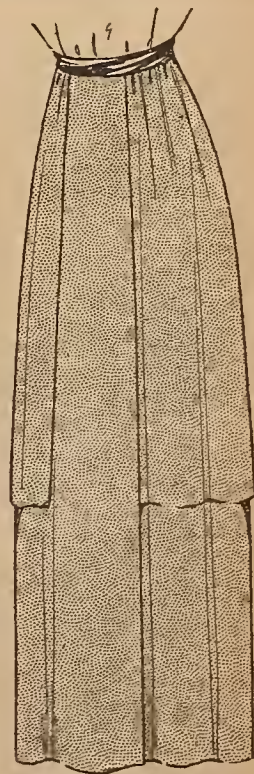
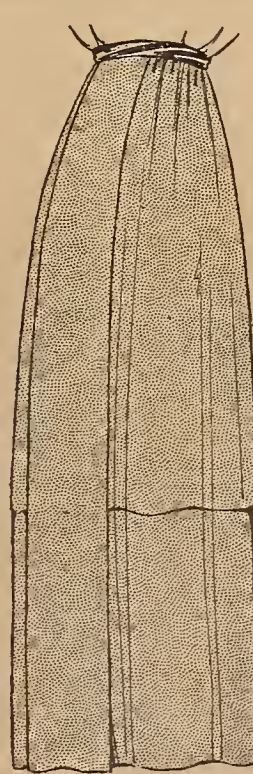
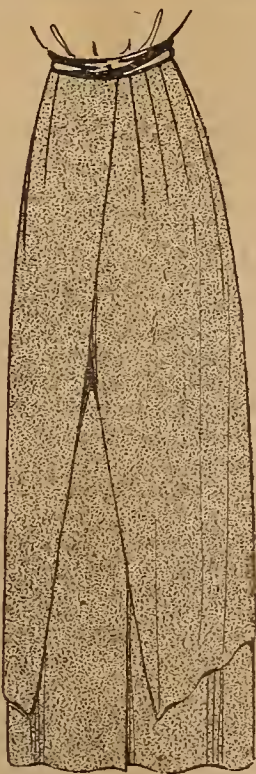


No. 2269



No. 2268

No. 2249
No. 2250



Three skirts, entirely different in style, which can be made from pattern No. 2179, costing ten cents

No. 2179—Adaptable Five-Gored Skirt 22 to 34 inch waist. Length, 41 inches. Material for 26-inch waist, six and five-eighths yards of twenty-two-inch material, or three and three-fourths yards of thirty-six-inch material, with three and one-half yards of twenty-two-inch material, or two and one-half yards of thirty-six-inch material, additional for tunic. The plaited tunic crosses in front

Every woman who sees this page will want this splendid skirt pattern. It only costs ten cents, and yet all of the skirts made from it are entirely different. For this reason skirts of cloth, wash fabrics, voiles, chiffons and other soft fabrics may be made from this pattern. Either of the tunics may be gathered, or, if preferred, they may be plaited. The skirt fastens at the left side in front

Some Recipes the Home Baker Will Like

Contributed by Our Readers

All Kinds of Biscuits

Beaten Biscuits—Two cupfuls of flour, two tablespoonfuls of lard, one-half teaspoonful of salt.

Sift salt and flour. Blend lard, and mix with cold milk to make a stiff dough. Beat the dough thoroughly with the end of the rolling-pin, or run it through a beaten-biscuit kneader one hundred times. The dough will be perfectly smooth. Roll until it is one-half inch thick. Cut with a small round cutter, and prick the top with a fork. Bake twenty minutes in a hot oven.

Spoon Biscuits—One quart of sour milk or buttermilk, one teaspoonful, each, of soda and salt, two tablespoonfuls of butter and sufficient flour to make a stiff batter (not dough). Drop in hot gem-pans, and bake in a quick oven.

Graham Biscuits—Sift together one cupful of white flour, one teaspoonful of salt and three heaping teaspoonfuls of baking-powder; add one tablespoonful of sugar and three cupfuls of Graham flour. Rub in two tablespoonfuls of butter, and with sweet milk mix to a soft dough. Roll out three fourths of an inch thick, cut into rounds, and bake in a hot oven.

Cream Soda Biscuits—To one and one-half cupfuls of sour cream, add one-half teaspoonful, each, of salt and soda, and flour to make a stiff dough. Roll thin, cut out, and bake in a quick oven. Serve at once.

Cream Tea Biscuits—Sift one quart of flour with two teaspoonfuls of baking-powder and one teaspoonful of salt. Mix to a soft dough with sweet cream, roll thin, cut into tiny biscuits, and bake in a quick oven.

English Biscuits—Sift together one and one-half pints of flour, one coffee-cupful of corn-starch, three tablespoonfuls of sugar, two teaspoonfuls of baking-powder and one-half teaspoonful of salt. Rub in three tablespoonfuls of butter, add one well-beaten egg, one cupful of milk, one-half cupful of currants and one tablespoonful of coriander-seed. Mix into a smooth, soft dough, roll

one-half inch thick, cut in rounds, and bake on buttered tins in a hot oven for twenty minutes. When done, rub over with a little butter on a clean bit of cloth.

French Biscuits—Beat the yolks of four eggs with one-half pound of sugar, add one-half pound of flour and the stiffly whipped whites of the eggs. Flavor with almond, or any flavoring liked, drop in spoonfuls on a buttered tin, sprinkle sugar over the tops, and bake.

Naples Biscuits—Beat the yolks of twelve eggs very light, add one pound of fine sugar, and beat again; whip the whites of the eggs until stiff, and add them, alternately, with



Sour-cream pie

one pound of flour. Flavor with one teaspoonful of mace. Bake until a light brown, and sift white sugar over them.

Damascus Biscuits—Whip the whites of three eggs until stiff, add one-fourth pound of hard butter chopped fine, one-half ounce of bitter almonds chopped fine, and beat all well together. Beat the yolks of the eggs well with six ounces of sifted loaf sugar, add to the whipped whites, and mix well; fold in two ounces of flour and sufficient lemon extract to flavor to taste. Pour into small tins or paper molds, and bake in a quick oven.

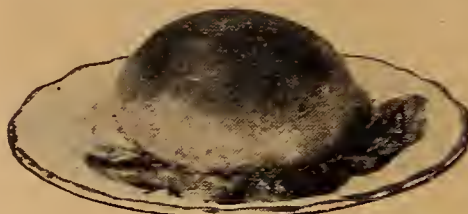
Cream-of-Tartar Biscuits—One quart of flour, two teaspoonfuls of cream of tartar, one teaspoonful of soda and one teaspoonful of salt sifted together; rub in two tablespoonfuls of butter, and mix to a soft dough with sweet milk or water. Roll thin, cut out, and bake quickly.

Egg Biscuits—Take one pound of flour, and mix to a paste with the whites of two eggs; beat, and roll out thin; work in three fourths of a pound of butter by placing bits on the paste, flouring, folding and rolling out again until all of the butter is used. Move the rolling-pin always from you. Cut in small rounds or squares, and bake in a quick oven.

Baking-Powder Biscuits—One quart of flour, two rounding teaspoonfuls of baking-powder, one level teaspoonful of salt, two tablespoonfuls of butter, and sweet milk or water to make a soft dough. Roll one inch thick, cut in rounds, and bake in a quick oven.

Sandwich or Twin Biscuits—Make a nice baking-powder-biscuit dough, and roll very thin, brush over the tops with melted butter, put together in pairs, one on top of the other, and bake in a quick oven.

Maple Biscuits—These are made just like the twin biscuits, powdered maple sugar



English duffinies

being spread thickly between each pair of biscuits before baking. Chopped nuts, or dried or candied fruit may be used in the same way.

Abernethy Biscuits—Sift together three even cupfuls of flour, one tablespoonful of sugar, two teaspoonfuls of baking-powder and one-half teaspoonful of salt. Rub in one-half cupful of butter, add one tablespoonful of caraway-seed, one well-beaten egg and one cupful of sweet milk. Mold lightly, roll one-third inch thick, cut in small squares or rounds, and bake in a hot oven.

ELMA IONA LOCKE.

Pie Recipes

Sour-Cream 'Pie—One cupful of sour cream, three fourths of a cupful of raisins put through the meat-grinder, one scant cupful of sugar, yolks of three eggs, white of one egg beaten stiff and mixed with the other ingredients, one teaspoonful of cinnamon and one-fourth teaspoonful of ground cloves. Use no upper crust, but beat the two whites remaining with powdered sugar for a meringue for top of pie. Mrs. J. J. O'C.

Individual Jam Pies—One and three-fourths cupfuls of flour, one-half teaspoonful of salt, one-half cupful of lard and cold water to make a soft dough. Mix flour and salt, blend lard thoroughly with the flour, add water to make a soft dough, and mix as little as possible. Roll lightly from the center out, until one-eighth inch thick. Cut into two-and-one-half-inch squares, and bake in a muffin-tin in a hot oven. When the crusts are cool, fill with jam, and cover the top with whipped cream.

Custard Pie—Two cupfuls of milk, three eggs, one-half cupful of sugar, one-eighth teaspoonful of salt and one-half teaspoonful of vanilla. Beat eggs, and add sugar, salt and vanilla. Add hot milk gradually.

Crust for Pie—One and three-fourths cupfuls of flour, one-half teaspoonful of salt, one-half cupful of lard and ice-water to make soft dough. Mix salt with flour, work lard in thoroughly, and add ice-water until a soft dough is made. Roll lightly from the center out, until one-eighth inch thick. Place in a tin, being careful to remove air-bubbles. Brush with egg-whites. Bake ten minutes in a hot oven. Add custard, and bake in a moderate oven until custard is firm.

A. B. C.

English Duffinies—Make a good short pie-dough. Roll and cut into three-inch squares. Take loose country sausage, a dessertspoonful to each square. Roll up like a little turn-over pie. Bake fifteen minutes in a moderate oven.

Sometimes several oysters are added to the sausage before enclosing it in the crust. These are delicious.

N. L.

Easy Tatting for Summer Dresses and Aprons

With Directions by Evaline Holbrook

TATTING in its present revival is a popular trimming, not only for the dresses, underwear and aprons of children, but also for the heavy linen gowns worn by their mothers and older sisters. The designs illustrated on this page are worked as follows:

Wide Beading—Two threads are needed to make this beading. The shuttle should be filled for one thread, and the spool of cotton retained for the other. The thread must not be broken between them.

On the thread midway between the shuttle and the spool make a ring, and on it work four double stitches, *picot, one double stitch, repeat from * until eight picots are made, four double stitches. Draw up. Now throw the spool thread over the hand, and on it work eighteen double stitches, making them with the shuttle thread. Throw the shuttle thread over the hand, and still with the shuttle thread, work a ring like the first ring.

With the shuttle thread now work eighteen double stitches over the spool thread, and with the shuttle thread make

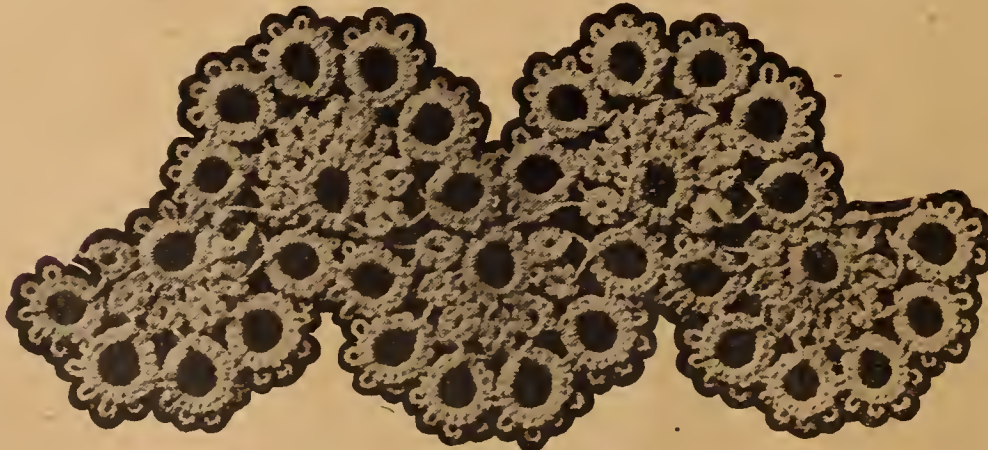
another ring, catching the first picot to the last picot of the first ring made. Work from one side to the other, always making the stitches of the bars on the spool thread, but otherwise using the shuttle thread throughout the work and always

two edgings. The third and fourth picots of the first ring of the second diamond are joined to the third and fourth picots of the third ring of the first diamond, and the third and fourth picots of the second and fourth rings are joined to the corre-

ring, using the shuttle thread to make it and catching the first picot to the last picot of preceding ring. Make a loop and a ring alternately throughout the length.

Banding of Half-Wheels—This banding is made with one thread, the shuttle thread. Throw a ring over the fingers, and on it work four double stitches, *picot, two double stitches, repeat from * until eight picots are made, four double stitches, draw up the ring. A quarter of an inch along the thread make another ring, on it work six double stitches, catch in the first picot of first ring, six double stitches, draw up. An eighth of an inch away make another ring, and on it work four double stitches, *picot, two double stitches, repeat from * until six picots are made, four double stitches, draw up. An eighth of an inch away make a small ring as before, catching it to the second picot of first ring, and make one small ring and one large ring alternately in this manner, until a small ring has been caught in each picot of the first ring excepting the last. Catch each large ring to the preceding large ring on the first picot. There should be in all seven small rings and six large rings, not including the center ring.

Catch thread in last picot of last large ring, and one-fourth inch away make a ring like first ring made. This is the center of second half-wheel, and around it work small and large rings as before; continue to make half-wheels in this manner.



An attractive Banding of Half-Wheels for a linen or gingham dress

catching the first picot of each new ring to the corresponding picot of the preceding ring at that side.

Narrow Ring and Loop Insertion—This insertion is made by joining the rings of two lengths of the Narrow Scalloped Edge. Make one length first, then join the second length to the first on the third and fourth picot of each ring.

Wide Ring and Loop Insertion—Two lengths of the Narrow Scalloped Edge are needed for this insertion. They are joined with diamond-shaped figures, as follows: Using only the shuttle thread, make a ring like those of the edge. An eighth of an inch away make another ring, catching the first picot to the last picot of preceding ring, and the third and fourth picots to the third and fourth picots of the first ring of one length of the edging. Make a third ring, catching the first picot to the last picot of preceding ring, and make a fourth ring, catching the first picot to the last picot of third ring, the third and fourth picots to the third and fourth picots of first ring on the second length of edging, and the final picot to the first picot of the first ring of the group. Diamonds of four rings each are made in this way down the length between the

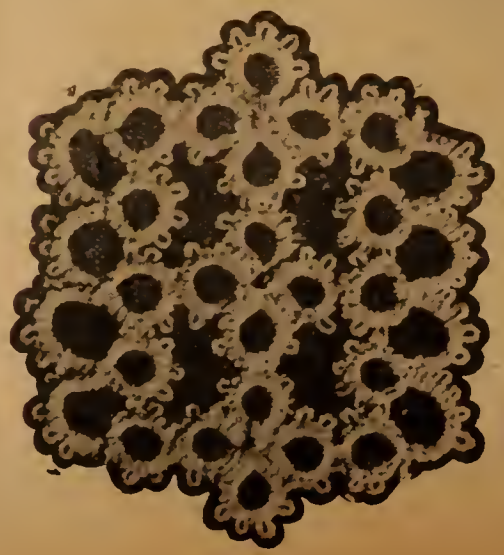
sponding picots of the second ring along the adjacent edging.

Narrow Scalloped Edge—For this edge two threads are used, as explained for the wide beading. Midway between the spool and the shuttle make a ring, and on it work four double stitches, *picot, one double stitch, repeat from * until six

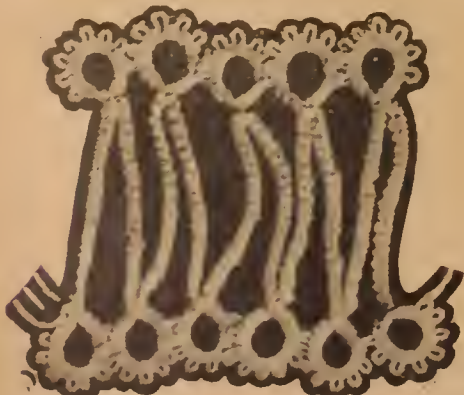
To the left is the Narrow Ring and Loop Insertion, and to the right the Wide Ring and Loop Insertion. They are suitable for use on petticoats and gowns made of heavy linen



picots are made, four double stitches. Draw up the ring. Throw the spool thread over the hand, and on it, with the shuttle thread, make four double stitches, *picot, one double stitch, repeat from * until four picots are made, four double stitches. Then make a ring like the first



This Narrow Scalloped Edge makes an attractive finish for children's dresses



Wide Beading for a belt-ribbon and the low necks of peasant dresses

The Page for Sunday Reading

Treasures of the Kingdom

By William J. Burtcher

The kingdom of heaven is like unto treasure hid in a field; the which when a man hath found, he hideth, and for joy thereof goeth and selleth all that he hath, and buyeth that field.—Matt. 13, 44.

ATREASURE may be anything that contains riches in abundance and has lasting qualities. It may be a pearl of great price that we can carry with us, or it may be a gold-mine that is stationary. A hidden treasure is of no use until it is found, and may never be found if not sought. The kingdom of God being like a treasure that is hid in a field is also made up of treasures that are hid in various fields:

The treasure of knowledge is hid in a field called education or college. A man must spend four or more years in that field searching diligently for this treasure to find it. Some explore the field, but never find the treasure after all.

The treasure of harmony is hid in a field called music. A man must work hard in that field for a long time before he really finds this wonderful treasure. "Do you play a fiddle?" a man was asked. "I don't know," he answered. "I've never tried it." When he did try it, his friends begged him to desist. The treasure was hid in that very instrument, however, and only a few have found it.

The treasure of things to eat is hid in a field called agriculture. The farmer must hunt for this treasure with his plow and hoe, for it is indeed hid in the earth. The more scientifically, the more efficiently, the more earnestly, he hunts for this treasure, the more he finds of it.

The treasure of spiritual things is hid in a field called the church. A man may go to church regularly for years and never notice it, however, for it is hid there, and must be sought.

In this parable a man came along and found the treasure hid in the field. Thank God for the men in all ages who have come along and found the treasures and handed them down to us.

Along came a man by the name of Columbus and found the treasure of a new world, and we are living in it.

Along came a man by the name of Franklin and discovered the treasure of electricity in the clouds, and we are riding in electric cars, and turning night into day.

Along came a man by the name of Newton, who found the treasure of gravitation under an apple-tree, and we understand a little more about the universe.

Along came a man by the name of Wright and found the treasure of flying like birds, and we are about to solve the problem of the perfect locomotion.

Along came a man by your name, and what is he finding? Are you finding the treasure of wisdom that is hid in your brain? We are told that the fear of the Lord is the beginning of wisdom. The man who hasn't learned that is on the other side of the beginning of wisdom. He hasn't found this treasure, no matter how smart he thinks he is. Have you found the treasure of wealth that is hid in your hands? What can you do? Are you finding the treasure of harmony that is hid in your every-day life? Anger, fretting, complaining, and the like, are discords that interfere with life's harmony. This is a treasure that must be sought after with much concern. Have you found the treasure of peace with God that is hid in your soul? Seek these treasures, and you shall find them.

Having found the treasure, the man in the parable hideth it. He did that so that no man would take it from him. Before he found it, the treasure was in some other man's hiding-place, some man now dead. After he had hidden it, the hiding-place was his own secret. Having found the treasures of the kingdom, we, too, must hide them, so that they will always be ours. Hide the treasure of knowledge so that no man can take it from you. Hide the treasure of spiritual things in your soul so that the world, the flesh and the devil will never be able to rob you of it.

Now, the man of the parable selleth all he has for joy of finding the treasure. He got all of himself together. We should be joyful and optimistic and smile, especially if we are finding any of the treasures of the kingdom. We should get all of ourselves together and get possession of the field or fields where our treasures are hid. In selling all he had, the man of the parable simply gave up that which kept him from possessing the field that contained the treasure.

And now what did he do? He bought that field. He did not buy the treasure at all, but got it free. Suppose the field



contained ten acres and cost a hundred dollars an acre. He paid a thousand dollars for the field. Then the treasure must have been worth more than the field, or it would hardly have paid him to have bought it.

We cannot buy the treasures of the kingdom; we simply buy the field and get the treasure thrown in, and strangely enough the treasure is always worth more than we pay for the field.

There's education. College tuition costs about two hundred dollars a year. That's what we pay for the field. In four years we have spent \$800. Now we carry away the treasure, which may be worth millions.

Our church dues may be ten dollars a year, or more. That is the price of the field. The treasure that we may find in that field cannot be estimated in dollars and cents.

The farm we buy may cost a hundred dollars per acre. The crop that we raise from it each year may sell at a hundred dollars per acre, and we may keep this up for fifty years. Then the treasure has been worth in that time fifty hundred dollars per acre—while we only paid a hundred in the first place.

This man of the parable might have gone into that field at night and carried away the treasure, as the owner of the field did not seem to be aware of the treasure. But this would have been dishonest. He bought the field. There are too many people about us who are trying to get the treasures of the kingdom without buying the field. Some men talk against going to college—say they can learn more by teaching themselves at home. They are trying to get the treasure without buying the field. Others say they can be just as religious outside of the church as in it. That may be true—but are they? They, too, are trying to get the treasure without buying the field.

Perhaps the man of the parable did not know the exact location of the treasure—simply knew that it was hidden somewhere in that field, and bought the field so that he might dig in it and work it until he found the treasure. Anyway, that is the way it is mostly with us to-day. We know that the treasure is somewhere in the field before us, and we must work the field.

Let us ask ourselves these questions: Have I found the field containing my treasure? What have I given up to possess the field? How am I working the field to get the treasure? Am I getting as much of the treasure as I ought to? What am I doing with the treasure?

The God of Our Fathers

By Rev. Chas. O. Bemies

Sunday-school lesson for March 30th: Heb. 11, 1-19.

Golden Text: Our fathers trusted in thee; they trusted, and thou didst deliver them.—Ps. 22, 4.

The Bible, especially in the Old Testament and the four Gospels, is a country-life book. Let us interpret it accordingly. We believe that the Bible is a true record of facts.

THE successful farmer must have a long-term plan for his crop system. He must look ahead several years at least. He is a prophet; and fulfills his own prophetic scheme. God works in the same way, only He has untold generations in which to work out His plans. God's main purpose in creating man was to have earthly children whose natures should be and remain like His. So He created them in His own likeness. Like begets like. God made us out of the earthly materials. He is our Father, and the earth is our Mother in a more real way than we usually think. We are both heavenly and earthly. Man bungled up God's plan in the very beginning by disobeying orders. Then came the murder of Abel by Cain. Then a new line of righteousness was established in another son, Seth, which continued unbroken for a number of centuries. But intermarriage

with the wicked line broke up this plan of God, until the earth ran riot with unrestrained wickedness. God gave man sixteen hundred years for repentance, but men became like savage beasts. Sin had run itself to destruction. There was nothing for it but to clean up the earth and begin again. So God picked out the best man He could find in all the earth to start the human race anew again. Then came the flood. But man soon forgot and started on the downward path again. After centuries God picked out once more the most righteous man on earth, Abram, entered into a covenant with him and started a side-line of righteousness through him which, through all the evil centuries and backslidings, is persistently leavening the whole lump of humanity. The children and nations of the earth will again some time be real Sons of God on this planet. Righteousness is going to conquer. A great scheme, isn't it? Are you working for or against it?

Jacob and Esau

By Rev. Chas. O. Bemies

Sunday-school lesson for April 6th: Gen. 27, 22-34. Read Chapters 25-27.

Golden Text: The Lord is a God of judgment: blessed are all they that wait for him.—Isa. 30, 18.

ESAU and Jacob, twins, were children born of prayer. They were the result of the faith of Isaac. Look it up and see. Esau liked the wild hunter's life, but Jacob worked up in his father's business. Isaac peacefully enjoyed the comforts of a good living. He liked Esau, the elder, better because he enjoyed his venison, but Rebekah was partial to the home-loving Jacob, who was naturally better fitted to succeed to his father's estate. Partiality of parents always makes trouble in any home. Rebekah was always scheming to work things around to Jacob's advantage, and thereby instilled this unjust principle into him. Parents little realize what apt imitators of their actions children are. The parent is the only God the child knows at first. Parents are especially delegated to lead their children by example and teaching into a knowledge of God. Parenthood is blessed only when this is done. It's awful for any parent to live a Godless life. Rebekah taught Jacob to be crafty. So when Esau came in from a long and fruitless hunting trip, tired out and almost famished, and eagerly asked Jacob for some of his lentil stew which was just ready, Jacob saw his chance. "Sell me your birthright, and I will." Hungry Esau, ready to drop, said, "If I die, you'll get the birthright anyway. Give me the food. It's a bargain." But Jacob made him swear to it first. Esau sold his birthright for a mess of pottage. Did you ever stop to think what low things some men sell their birthright for? Some actually sell out for the privilege of swearing, or of cheating, or lying, or drinking, immorality, and a lot of other worse than useless things. Strange, isn't it? Afterward Esau went and married a couple of heathen women from a neighboring tribe. This was almost too much for Isaac and Rebekah. It was another evidence of Esau's unfitness to be Isaac's successor. For no mixed marriage was allowed in Abraham's descendants. I don't see why blind Isaac wanted to bless Esau as his successor in office. But he asked Esau to hunt some venison and prepare a feast for him, and he would formally bestow the blessing on his first-born to succeed him as tribal head. Rebekah eavesdropped on them and immediately got busy. She would fix it so Jacob would receive the blessing instead of Esau! So she got Jacob to kill two kids and cooked the choice cuts to resemble venison, masqueraded him in one of Esau's suits, fitted his hands and the back of his neck with goat-skin, for Esau was a hairy man, and sent him with the food into the presence of his father to obtain the first-born's blessing. Perhaps Isaac was really deceived, but I can't believe it, for he recognized Jacob's voice, and it's hard to deceive a blind man's touch. I believe he knew Esau was unfit to take his place, but didn't want to go back on his first-born. When he found himself tricked, he let it go, recognizing Jacob as the more fit for chief of the tribe, and so blessed him.

No wonder Isaac trembled violently when Esau came in later with his venison and discovered the trick! Esau piteously begged for a blessing also, and received it, with promise of abundant prosperity, but a secondary place to Jacob.

Jacob's fraud was not God's way, for He would have given him the blessing in another and honorable manner. His treachery came home to roost later and sunk its claws deep into his soul.

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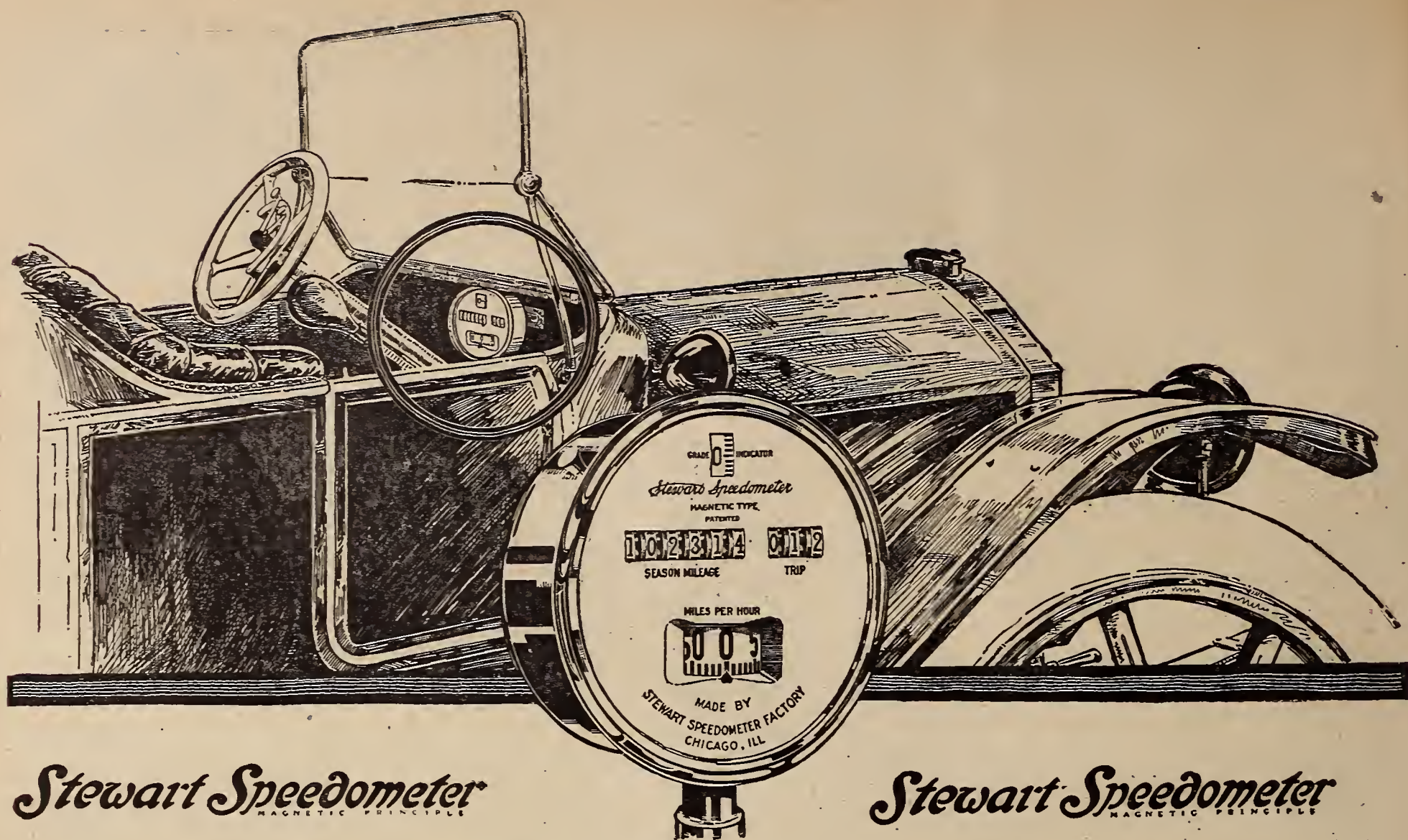
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SATURDAY, APRIL 12, 1913



The Interruption

THE EDITOR'S BILLBOARD OF COMING ATTRACTIONS

Special Article

There are so many different kinds of doctors nowadays that readers of FARM AND FIRESIDE will not be surprised to learn of crop doctors. The farmers of a county in Illinois have hired an agricultural expert to be their crop doctor. They found that he will be kept so busy that they have put him on a salary instead of paying him so much a visit. The next issue of FARM AND FIRESIDE will tell of the work of this crop doctor.

The hen that nets her owner three dollars a year has good reason to cackle when she lays an egg. But, after all, the value of a hen depends chiefly upon her owner. Therefore you will be interested in the article entitled "Knowing How With Hens."

Garden and Orchard

The fable of the lion and the mouse teaches us not to ignore creatures which appear small. The bug and insect question is one of the greatest ones now confronting gardeners and orchardists. The most successful of men in these lines are those who know most about bugs. For this reason FARM AND FIRESIDE experts will tell us some bug stories in the next few issues. If you want to know why your orchard or garden doesn't pay and how to make it pay, be sure to read about the bugs.

Poultry

A few issues back, Mr. Grundy, one of the best poultry experts in the country, said in FARM AND FIRESIDE that eggs could not be washed without spoiling them for market purposes. Several other poultry experts have objected to Mr. Grundy's statement, claiming that they have washed and successfully marketed soiled eggs and that the cleaning process was entirely successful. This is a matter of economic importance and will be further discussed in a coming issue.

Crops and Soils

The watchword in farm practice nowadays is "experiment." First decide what you wish to accomplish, next devise some plan which you think will accomplish it and finally try out the plan. That's all experimenting really is. It doesn't take a man with a lipen collar and a boiled shirt to make farm experiments. A farmer's idea of experiments will therefore interest you.

Farm Notes

How about the immigrant for farm labor? Of course the idea does not appeal to you at all. But Mr. Hollister Sage, who has made a study of the problem, has written for FARM AND FIRESIDE something on "The Transfusion of Blood as Applied to Farm Help." It discusses the immigrant problem.

Live Stock and Dairy

Winter or summer dairying? Which is more profitable? Neither. Dairying is an all-year business with those who are most successful with cows. An article on this subject tells the reason why.

The Farmers' Lobby

Attention is called to the fact that Mr. Welliver never goes on a vacation as far as Congress and the interests in Washington have been able to find out. Next issue look for The Lobby.

Special Articles for Women

"What to Plant for Beauty Around the Farm Home" is the title of a page article which tells how to utilize many of the beautiful and easily transplanted shrubs and wild flowers. It is surprising to find how many of our native plants may be most effectively used for beautifying the country home. All those who have enjoyed the serial will be equally interested in reading how "Lettie Meets the Art of Life" in the April 26th number.

Children's Page

There is a treat in store for our boys and girls who are wondering how they can have a good time on May Day.

Bird-Houses

Bird-houses are lots of fun for the boys to make. The bird-houses that are going to be published will give the boys a chance to try their hand at carpentry, and at the same time help out many young bird couples which are looking for places to live.

Fancy-Work

The old-fashioned cross-stitch has become so popular nowadays that our readers will welcome these new designs, with directions for working them in colors.

Fashions

Mothers will be interested in the fashion page, which shows many attractive designs for children of all ages, and some for the mothers themselves.

WITH THE EDITOR

The Ideal Farm

What is the ideal farm? Pretty hard to answer. There is a man in Linn County, Iowa, who thinks the farm of 120 acres in the corn belt is the ideal. He has had experience on farms of 80, 120, 160 and 490 acres, and believes in the 120-acre farm, "because there is a richer life, less pain and sorrow, and more pro rata profit in farming just enough land to keep one busy without keeping hired help."

The land is free from stumps, stones and obstacles; the fields are laid out regularly and on a liberal scale, machinery can be used to perfection, and one man can work 120 acres "without hiring help."

How much clear money can a man make on this sort of farm? This Iowa farmer, whose name is J. F. Sparks, has some ideas on this which are based on successful experience.

The ideal farm of 120 acres described by this 120-acre farmer should sell, he says, products on the average to the amount of \$4,600 a year. Feed to the value of \$1,000 a year would be bought. This would leave the farmer, as interest and wages, \$3,600. He deducts the \$600 for incidentals, and gives \$3,000 as the net return.

Mr. Sparks divides his land into four fields—fenced hog-tight. On one he raises corn with pumpkins, and follows with oats and winter wheat. On the second, clover is sown with the wheat and oats of the year before. On the third, corn is grown on the broken-up clover sod. This is a three-year rotation. Where he says "wheat and oats," he means twenty-five acres of oats and five acres of winter wheat. There is nothing new, of course, in this.

This accounts for ninety acres. The other thirty acres Mr. Sparks keeps in permanent pasture and for the building-site, garden and orchard. This provides for corn on clover-sod, which is the best way.

How Much Stock?

He would have on this farm, in buildings, a good "modern" house, a barn, a cow-stable and silo, a hog-house with cement feed-floor outside, chicken-house, cribs, granary and machine-shed.

In animals he would have two "splendidly bred" draft-mares and would raise draft-colts. He would have eight to ten head of mares and colts constantly. Also twelve milch cows, each of them good enough as a milker to give \$40 income a year. If you have any that won't do that, sell them! He would keep one bull. In fowls the flock should number about three hundred hens, some geese, some ducks, some turkeys, some guineas and a pair of peafowl!

And listen to his talk about hogs: "twenty head of long, lank brood-sows and one boar." In addition he recommends five stands of bees. You see, he proposes to pasture the fields and woods and roadsides with the bees.

Under the head of "garden" he includes a vineyard, an orchard, berry-patches, table vegetables and potatoes. These come out of the fourth field, with the building-site and permanent pasture.

Mr. Sparks says he knows of families that are doing a \$400 poultry business yearly with such a flock as I have mentioned, but he sticks his pin at \$250 as what anyone should do who makes the most of his chances and keeps the right kind of hens. The dozen cows should turn off \$480 in the year, at the minimum of \$40 each—or the butcher's block. This farm should sell three colts in two years, or one and a half a year, for \$300. Even in the present slump the right kind of colts will bring \$200, but, as a horse-buying friend of mine says, "They have to be poppin' colts!" Mr. Sparks would raise poppin' colts. With the right kind of breeding, it's as easy to raise that kind as any.

A Problem in Pigs

He wouldn't keep a sow that wouldn't raise two litters a year, each of which would number six porkers on the average at weaning-time. "It is no trick," says he, "to select twenty sows that will do this if you give them a fair chance. It is no trick, with good hogs, good quarters, good water, good oats, good corn, good clover-hay and good care to make these pigs average 250 pounds at ten months."

The 240 hogs at six cents—a fair average price—will bring \$3,600. He would consume on the farm the honey, the fruits and the vegetables, and sell only the live-stock staples.

"You will not be able to reach this figure the first year," says Mr. Sparks, "but with good management you can come close to it the second year."

This is a corn-belt idea, and one of the best-worked-out I have ever seen. It comes from a man who rides the corn-plow. It is worth the consideration of every farmer everywhere.

The central thought is EFFICIENCY. No poor cows, no poor sows, no poor horses, no poor buildings, no poor machinery, nothing but the best. He says that the way to get these things is to buy them and pay for them if you can, and if not, go in debt for them. On this point every man must be his own judge. Also as to the size of the farm. In many places a man could no more work 120 acres than he could fly, and in some places he would need much more than that.

What's Your Ideal Farm?

But on the whole Mr. Sparks has done a good thing in giving us something concrete to work for in his ideal farm—an ideal which he has worked out. What's the ideal farm for your condition, reader? Let's hear from you. And, by the way, the paper from which I get this ideal of Mr. Sparks's was read before a common, ordinary farmers' institute in Linn County, Iowa,—just such an institution as you may have in your neighborhood,—and maybe did have last winter. We can't all have the deep, black loam of Iowa, nor can we always get even half of 115 bushels of corn to the acre. But the central thought in it is ready to be applied on any farm and any soil.

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Mention FARM AND FIRESIDE when you write to our advertisers, and we guarantee you fair and square treatment. Of course we do not undertake to adjust petty differences between subscribers and honest advertisers, but if any advertiser in this paper should defraud a subscriber, we stand ready to make good the loss incurred, provided we are notified within thirty days after the transaction.

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Secretary Houston's Opportunity

WHEN the unexpected happened in the appointment of David Franklin Houston, Secretary of Agriculture, the natural inclination of the farmer and disappointed candidate was to magnify Mr. Houston's lack of agricultural qualifications. President Wilson is censured for placing a schoolmaster in charge of our farming interests that now overshadow in importance all others. While this act of the President is without precedent in any country of importance of which we have knowledge, it is too early to get disturbed by this unusual appointment. Every official in the new administration should have a chance to make good without hindrance.

Not every candidate who failed in the race for Secretary of Agriculture would have measured up to the requirements of this office had the choice fallen elsewhere. The work of conducting the United States Department of Agriculture has grown to be a man's job.

The duties of Mr. Houston as chancellor of a great university did not require him to have the broad and definite knowledge that the Secretary of our Department of Agriculture is expected to possess. Nevertheless, there are men who, while preparing for a chancellor's job, understand that a knowledge of the essentials underlying modern agricultural science is a necessary equipment for the work that has to do with the education of our present-day youth. Our new Secretary of Agriculture is said to be one of these. At least, Mr. Houston has made an exhaustive study of a subject that now has a most intimate connection with successful farming; namely, economics. Uneconomic production and distribution are the pitfalls responsible for failures innumerable on our farms to-day.

Our grandfathers were sure of a good living without much attention to economic production and distribution. Farmers from now on must operate more and more on a business basis similar to what manufacturers have been compelled to adopt. If Secretary Houston can be the means of hastening the time when farmers generally will produce and distribute the products of their farms economically, the entire country will gain by a period of his administration. We already have an abundance of light on the production of crops. What is now particularly necessary is to be shown more (by the man from Missouri) how farm products can be grown and distributed at a profit by the farmer of moderate capital.

Another opportunity for Secretary Houston is to bring into use his knowledge of and training in political science in building up an effective administration in his department which has in some important respects been admittedly lax. First he must establish a harmonious working organization and be its acknowledged head in fact as well as in name before real accomplishment can be hoped for. We believe that the new Secretary will be master of his official household.

Parcel Post in Action

FROM many sources reports are arriving stating that parcel post is being tried out for every kind of carrying that the present inadequate law makes possible. The January business under this law exceeded the expectations of the postal authorities, and the parcels carried in February were forty per cent. in excess of the January business. The fifty million parcels carried in February were handled without noticeably congesting the mails, and the Post-Office Department officials already begin to understand the revenue possibilities that can be expected when the shortcomings of the parcel-post law are remedied.

The personal letters of FARM AND FIRESIDE subscribers constantly coming in from widely separated points give detailed results of experimental shipments sent by parcel post. These throw much light on the limitations of the present law. Only a few commodities can now

be posted with mutual satisfaction to shippers and receivers, but the success and convenience of sending these few are rapidly making sentiment for a really adequate parcel-post system.

The State of Ohio saved the tidy sum of \$13,600 in one transaction by taking advantage of parcel post to send out the automobile tags for the present year. Instead of an average cost of twelve and a half cents for each tag sent last year, the tags went this year for eight cents each by parcel post.

The law, shorn as it was in passage of essentials, is a foundation on which to work. Now it is for the people to demonstrate its failings and successes from the producers' and consumers' standpoint.

FARM AND FIRESIDE urges its readers to try out this law and get exact knowledge that can be supplied as a basis on which to work for a betterment of the law when Congress meets next winter. On July 1st of this year a C. O. D. parcel-post system will go into effect between money-order offices by which the price of the article and the charges on it may be collected from the addressee.

American hens laid 1,705 million dozen eggs in 1912, of which 19 million dozen were exported. The total production in 1900 was 1,300 million dozen.

We're Late but Alive

SOME of our readers may receive this issue of FARM AND FIRESIDE a few days late. The delay is due to the paralyzed condition of mail service in Central Ohio caused by flood waters. The FARM AND FIRESIDE offices and presses were not damaged and the next issue will reach you at the regular time.

Though we fully appreciate our tardiness in getting the paper to you, we are glad to announce that the railroads are using the few tracks and trains available first for the relief of the stricken area. The transportation of magazine mail is receiving only secondary consideration. Under these circumstances we are glad we are late.

Reputation for Full-Weight Butter

SHORT-WEIGHT butter is not necessarily due to dishonesty, carelessness or inaccurate scales. A shortage in weight may unintentionally be caused by shrinkage, which is simply the evaporation of moisture from the butter. Most butter contains between twelve and fifteen per cent. of moisture, and somewhere between the farmer's butter-worker and the consumer's table some of the moisture is likely to evaporate.

One-pound prints of butter will lose, on an average for the first few weeks, about one quarter of an ounce in weight every week, if they are packed so that air can circulate around them. If they are packed close together in a box, the shrinkage will be about one half as much.

However, the person buying butter expects to receive a full pound, and if he doesn't get it from one person he will try somewhere else. About sixteen and one-eighth ounces seems to be the proper weight of a print of butter when packed. To be sure, one hundred and twenty-eight of those eighths of an ounce will make a pound, but even that is a small matter compared with satisfied customers. The city retail grocer has had elastic business principles so long that his reputation is not enviable. The success of marketing from the farm direct to the consumer rests largely on the business principles which the individual farmer or farmers' associations adopt. People are judged by appearances even though appearances are deceiving. Therefore, full weights and measures are worthy of our most careful attention.

The Fittest for the Farm

A CANVASS of the business men of almost any city of importance in any part of our country will disclose the fact that from sixty to eighty per cent. of the men responsible for the success of the industries of those cities were farm-bred. When this fact is brought out, we, as farmers, almost insensibly find our shoulders squaring and heads assuming a higher level. But isn't there another angle to this tribute to farm upbringing?

Unquestionably the health, energy and intelligence contributed by the farmers have insured greater development and prosperity to the cities, but has not the fullest farm progress, such as improvement in marketing of farm crops and more economical farm production, been delayed by loss of the most ambitious farm youth constantly moving to the cities?

Without the influx of farm blood there would not have been the extension of commercial and industrial business in the cities and the outlet for surplus farm products would have been proportionately less. On the other hand, the middlemen would not have built up so effective a system for absorbing the revenues of the farms, had not the ambition and initiative going with recruits from the farm kept the vigor of city thought working and scheming at high pressure.

This much-discussed movement of farm youth to the cities has really had a more complex influence on our national life than is usually credited to it. The consideration of greatest importance is to know whether the youth most fit to organize and develop the farming industry according to modern requirements are now moving cityward, or do the majority of those now leaving the farms lack in those qualities which in days past led them to think there were greater opportunities in the cities.

When studied in a broad way there seem to be good grounds to believe that those now recruiting the cities from the farms generally have in view employment on the city car-lines, with the express companies or in the shops where the wage can be only nominal and the expectation of advancement not encouraging.

The number who have had training in agriculture, engineering or other special lines constitute but a small proportion of those who are leaving the farms for the cities. If then the best material out of which will develop our future farmers is now remaining on the farms and the least fit material is migrating to the cities, this problem will solve itself.

The important thing is to provide means whereby the youth of the farms can learn to judge fairly the comparative advantages of farm and city life, always remembering that all farmers' sons cannot be suited with farming any more than all doctors' sons can be satisfied with medicine as an avocation.

Flint Corn for High Altitudes

CONSULT your geographies and find how high you live above the sea-level, for that will make a difference in the kind of corn you ought to plant. Though more delicately worded, such is the advice of the New York Experiment Station to the farmers of that State. Coöperative tests conducted over a period of three years show that varieties of flint corn are better adapted for the production of ripe grain and stover than dent varieties. For elevations of from six hundred to one thousand feet, flint corn was best for grain, and there was no decided preference as far as stover was concerned. For elevations less than six hundred feet, dent corn was best for grain, stover or silage.

Other information on this subject seems to show that as we go north from New York State the effect of the increased latitude is similar to that of a higher altitude, and vice versa. Thus in the New England States flint corn does well at about sea-level, and dent corn grows successfully in the South even at high altitudes.



Quality Prices for Quality Eggs

Why It Pays to Sell Your Eggs Where the Price is Set by the Goods and Not by Guess

By Wm. A. Lippincott, Poultry Specialist of Kansas



PRODUCING better eggs is a farmer's problem. Furnishing the incentive for producing of eggs of the highest quality is an egg-buyer's problem. Both problems are simple. Both require extra care. Neither one will be fully solved without the other being worked out at the same time.

The production of eggs of the best quality involves considerable pains on the part of the farmer, and the farmer who is not already taking these pains because he has formed the habit of doing all his work well will not do so unless he is paid for his trouble. The only way of getting at him is to touch his pocketbook.

At the present time most of the eggs sold by the farmers throughout the country are purchased on the "case-count" basis, or at best "rots out." "Case count" means that a flat price is paid for all eggs regardless of quality or condition. On the "rots-out" basis the actually rotten eggs are not paid for, but everything else goes. Eggs that are small, dirty and stale bring as much money as new-laid eggs that are large and clean. This means that the producer of good goods fails to get his share of the returns.

The Best Price for the Best Eggs

In spite of the prevalence of such systems of buying, there are probably more farmers and farmers' wives who are marketing eggs above the average in quality than there are buyers who pay average prices and get eggs below the average in quality. This means that the dealer is not paying a price as high as the quality of the eggs would warrant.

The table shows some figures furnished by a Kansas egg-buyer. They are taken from his books and represent the eggs purchased direct from farmers during June, 1912.

On May 31st this dealer was paying fourteen cents a dozen and taking everything that was brought in, without reference to quality. On June 1st he began buying on a basis of two grades which he called "firsts" and "seconds." He paid fifteen and one-half cents for the firsts. These were eggs that were of good size, clean, uncracked and new-laid. He paid twelve and one-half cents for seconds, or eggs that were small, dirty, shrunken or cracked. Rotten eggs were discarded and not paid for at all.

It will be noticed by referring to the columns marked "Dozen" of "firsts" and "Dozen" of "seconds" that the firsts greatly outnumbered the seconds. There was not a single day in the whole month's business when this did not hold true. In the sum total of the month's business the "firsts" outnumbered the "seconds" more than three to one. This is only a single instance, but it is likely to be true in the majority of cases, and certainly will where quality buying is practised.

By referring to the columns headed "What they brought at 15½ cents" and "What they would have brought at 14 cents," on the first day's business, which happened to come on Saturday, this difference amounts to nearly \$10. If these eggs had not been graded, but bought on the flat price, the persons who had taken care of their eggs and brought in the 663 dozen of "firsts" would have gone home with nearly \$10 less money than they did go home with. On the other hand, as may be seen by referring to the columns headed "What they brought at 12½ cents" and "What they would have brought at 14 cents," it will be noticed that the persons that brought the 254 dozen second-class eggs went home with nearly \$4 less than they would have taken home if they had been selling at the flat price. This is as it should be. The person who sells a poor product should receive a less price.

Quality Buying Eliminates Guessing

The difference between the \$10 and the \$4 comes out of the dealer's pocket. This particular dealer says that he is glad to pay this difference because he gets more first-class eggs. At the same time he knows exactly what he is getting and does not have to guess at the number of "seconds" or "rots" that he may possibly get as he did when fixing a flat price. The

price is set by the goods and not by guess. The guess is not likely to favor the farmer as the dealer does the guessing.

There are rules that every farmer who takes pride in selling good eggs at a good price should follow:

First: Use males from one pure breed, mate them with hens instead of pullets, and keep it up year after year. It is the only way to secure a flock that will lay

The greater the difference, the better it is for all concerned. It is possible to market eggs that are over ninety-five per cent. "firsts" by observing a few precautions.

Infertile Eggs Keep Best

Third: Keep the male birds from the laying flock except during the breeding season. If you sell eggs on the quality basis, it will pay you for your trouble.

Date	"FIRSTS"			"SECONDS"			"FIRSTS" AND "SECONDS"	
	Dozen	What they brought at 15½¢	What they would have brought at 14¢	Dozen	What they brought at 12½¢	What they would have brought at 14¢	What they brought at 15½¢ and 12½¢	What they would have brought at 14¢
June.								
1	663	\$102.76	\$92.82	254	\$31.75	\$35.56	\$134.51	\$128.38
3	76	11.78	10.64	40	5.00	5.60	16.78	16.24
4	80	12.40	11.20	28	3.50	3.92	15.90	15.12
5	138	21.39	19.32	35	4.37	4.90	25.76	24.22
6	36	5.58	5.04	12	1.50	1.68	7.08	6.72
7	100	15.50	14.00	35	4.37	4.90	19.87	18.90
8	486	73.33	68.04	170	21.25	23.80	96.58	91.84
10	95	14.72	13.30	29	3.62	4.06	18.35	17.36
11	195	30.22	27.30	77	9.62	10.78	39.85	38.08
12	107	16.58	14.98	53	6.62	7.42	23.21	22.40
13	51	7.90	7.14	22	2.75	3.08	10.65	10.22
14	169	26.19	23.66	44	5.50	6.16	31.69	29.82
15	325	50.37	45.50	108	13.50	15.12	63.87	60.62
17	17	2.63	2.38	1	.12	.14	2.76	2.52
18	247	38.28	34.58	47	5.87	6.58	44.16	41.16
19	120	18.60	16.80	70	8.75	9.80	27.35	26.60
20	170	26.35	23.80	60	7.50	8.40	33.85	32.20
21	53	8.21	7.42	16	2.00	2.24	10.21	9.66
22	434	67.27	60.76	114	14.25	15.96	81.52	76.72
24	96	14.88	13.44	18	2.25	2.52	17.13	15.96
25	66	10.23	9.24	20	2.50	2.80	12.73	12.04
26	72	11.16	10.08	28	3.50	3.92	14.66	14.00
27	71	11.00	9.94	22	2.75	3.08	13.75	13.02
28	88	13.64	12.32	9	1.12	1.26	14.76	13.58
29	470	72.80	65.80	85	10.62	11.90	83.47	77.70
Total ..	4,425	\$685.87	\$619.50	1,397	\$174.62	\$195.58	\$860.50	\$815.08

uniform eggs of good size unless one goes to the expense of getting a pure-bred flock outright. It has been shown by experiment that a hen lays a larger egg than when she was a pullet, and that hen eggs hatch better and produce larger and stronger chicks than pullet eggs. Having selected male birds of the breed you prefer, use that breed persistently year after year. Using males from one breed and then another is almost as bad as using mongrels.

Ninety-five Per Cent. of "Firsts"

Second: Sell your eggs only to a buyer who candles and grades and who is willing to pay at least three cents more for "firsts" than for "seconds." If your present buyer does not candle, sell to one who does. Some buyers make a difference of eight cents between "firsts" and "seconds."

Out of 2,205 eggs from Kansas flocks that had no male bird present, and that were candled by experts from the United States Department of Agriculture, there were 1,427, or 63.8 per cent., first-class eggs. Some of these eggs had been properly cared for and some had not, but all were infertile. Out of 2,257 eggs from Kansas flocks that had male birds present these same experts found only 916, or 40.6 per cent., first-class eggs. The conditions in this case were exactly the same as in the first except that there were male birds present, and there was a difference of 23.2 per cent. in favor of the infertile eggs.

In money this means that, even if you are not taking particular pains with your eggs, by removing the male bird, they will net you over two thirds of a cent per dozen if you are receiving three cents more for "firsts" than for "seconds." Two

thirds of a cent is worth just as much when added to the selling price of the dozen eggs as it is when added to that of a pound of beef or pork on the hoof.

Fourth: Provide roomy, clean nests. There should be at least one nest for every six hens. Foul nests cause dirty eggs. Dirty eggs, no matter how large and fresh, are always graded as "seconds" or lower. It will not do to wash the eggs in trying to make them clean. A washed egg is classed as a "second" because it spoils sooner than an unwashed one.

Dirty nests are generally caused by the fowls roosting on the edge of the nests and allowing droppings to fall in, or by the hens waiting at the edge of their favorite nest for another hen to get through laying and fouling the side of the nest with droppings as they wait. In the nest illustrated the sliding door at one end may be shut at night. This will keep the birds from roosting on the nests. The narrow board by which the hens enter the nests allows their droppings to fall on the floor instead of accumulating to soil their feet and then the eggs. The removable board on the front of the nests makes it convenient to clean them.

Keep Eggs as You Would Milk

Fifth: Gather the eggs often, and keep them in a cool, dry place all the time until sold. It was found by the Government egg experts, while working in Kansas, that out of 385 clean, infertile eggs that were collected twice a day and kept in a cave or cellar, that was cool and dry, until they were taken to town, and kept out of the sun on the way to town, 375, or 97.4 per cent., were "firsts" when candled.

At the same time, out of 479 clean but fertile eggs which were allowed to remain in the nests until marketed, only 60, or 13.2 per cent., candled out first-class. This is a long way from a perfect record and is duplicated surprisingly often. Between these two extremes there are differences in degree.

Clean, infertile eggs taken from straw-stacks gave only 29.1 per cent. first-class eggs. Clean, infertile eggs from under a corn crib gave 70.8 per cent. "firsts."

To produce first-class eggs, all conditions must be right. Eggs, like milk, should be cooled just as soon as possible after produced, kept cool and marketed as soon as possible. Like milk and butter, eggs become tainted by odors and should be kept away from onions, turnips, kerosene, or anything else having an odor.

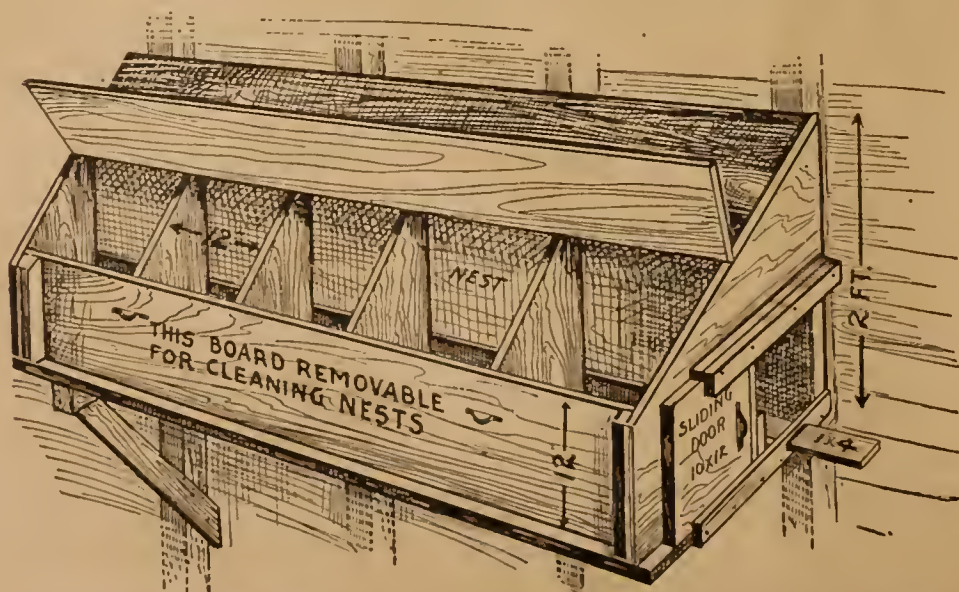
Sixth: Use the small, dirty or cracked eggs at home. Small eggs are just as wholesome for food as large ones. They cannot be sold for as much as large ones however, for they are not worth so much. Dirty eggs are also good if fresh, but do not look well. Because of this fact they are classed as "seconds." Cracked eggs will mold and spoil quickly. Eggs found in stolen nests are always of doubtful quality. It is better if you use them cautiously at home. By using the small, dirty and doubtful eggs at home, it is possible to build up a reputation for first-class eggs and make about three cents a dozen, or the difference in price between the first-class and second-class eggs.

The Candling Process

For those who may not be familiar with the process of candling I will explain that a fresh egg presents a clear pale yellow appearance when a bright light shines through it. An inferior or bad egg shows dark spots, blotches, blood veins and frequently an enlarged air space.

Various devices for candling or testing eggs are used, but all have for the essential principle a strong light in a case which is opaque except for an oval aperture slightly smaller than an egg and before which the egg can be quickly placed.

The aperture is either made in a leather diaphragm or is lined with some soft material against which the egg can be firmly pressed so that all the light comes through the egg. The operator works in the dark. A skilful egg candler can quickly tell the approximate age of an egg, whether it is good or bad, the degree of deterioration, and if incubated, to just what extent the germ has developed.



An excellent type of wall nest. The sliding door at the end can be shut at night



Hogs pasturing on sweet clover in Iowa

SINCE colonial days there has grown along our roadsides a legume classed as a weed by farmers, weed commissions, and even experiment station officers. A weed is "any plant out of its place." Many of our most useful crop plants are therefore weeds under certain conditions. So this characterization of sweet clover is not so much a disgrace after all, for while it is making roadsides unsightly it is furnishing splendid bee-pasture and improving every foot of land on which it grows.

Until late years the only steadfast friend of sweet clover has been the bee-man, whose neighbors have in many cases uttered imprecations against him, accusing him of scattering the seed with malicious intent.

There are Three Varieties of It

This antagonistic attitude is undergoing a change, and the agricultural press now contains many articles by stock-growers who are loud in their praises of this "new discovery" which promises to make their poor lands a profitable stock range for horses, cattle and sheep. As is often the case, many over-enthusiastic advocates appear and make preposterous claims. My purpose is to place sweet clover before FARM AND FIRE-SIDE readers in its true light, recounting its weaknesses as well as its strong points.

The most common kind of sweet clover and the one to which most writers refer when the simple name "sweet clover" is used is technically known as *Melilotus alba*. This is the white-blossomed sort, and it is also quite frequently designated as Bokhara clover and Melilot, or Melilotus, the latter title being the most common in the Gulf States. When the yellow-blossomed sort, *Melilotus officinalis*, is meant, the term yellow is usually attached to the name as "yellow sweet clover." Both of these species are quite common throughout the United States, and both are biennial, maturing their seed the second year after planting. The root then dies.

The seed of the yellow is almost identical with that of the white, but can be distinguished by seed analysts. The plants of the yellow are less vigorous, more spreading in form of growth and a trifle earlier in maturity. Most people, however, depend on the color of the bloom to distinguish it from the white.

The other yellow-flowered *Melilotus* common in the United States is of small growth and only an annual. It is known technically as *Melilotus indica*, but has been many times referred to as *Melilotus parviflora*. It is common in the Gulf States and in southern California and is quite easily distinguished from the other species by its smaller and less branched growth and more compact blossom panicle.

The sweet clovers are native of the Mediterranean region of the Old World, and were introduced into the United States by colonists as early as 1738. Only in the last ten or twelve years has their value as cultivated field crops been even partially recognized. The aroused interest in them has resulted in a considerable dissemination, especially of the white sweet clover, and it is at present grown extensively in Alabama, Mississippi, Kentucky and Utah and to a less extent in Nebraska, Colorado, Wyoming, Iowa, Wisconsin, Illinois, Indiana and Ohio.

Sweet clover is found growing in all parts of the United States. It will grow in humid and also in semi-arid localities, on the rather "acid" soils of the East and the alkali soils of the West, on both sandy and clay soils, in fact there are but few localities or conditions where it will not thrive.

A Good Stand is Sometimes Hard to Get

The matter of a good stand is perhaps the most disappointing feature connected with the utilization of sweet clover. Farmers noting its rank growth along the roadsides and around dumping-grounds presume it to be an easy matter to secure a stand on their cultivated fields, but many failures are apt to be encountered.

The exact causes of these cases of failure have not yet been determined. Perhaps in a majority of times it has been poor or delayed germination. The average germination of twenty-two samples of southern-grown seed tested by the United States Department of Agriculture was fourteen per cent.; the same number of sam-



Sweet clover growing in practically pure sand in western Nebraska

Sweet Clover

A So-Called Weed Which Farmers are Beginning to Recognize as a Useful Crop

By H. N. Vinall

ples of northern-grown seed averaged thirty-seven per cent.; while twenty-eight samples of imported seed averaged fifty-six per cent., the difference being almost entirely due to variation in the amount of hard seed. The lesson to be learned from these figures is that if we are seeding for a hay crop considerable quantities of seed must be used. As much as twenty to twenty-five pounds of hulled seed is necessary to insure a stand thick enough to keep out weeds and make a good quality of hay.

As explained before, almost any soil if reasonably well drained will grow sweet clover. Farmers in Colorado and other irrigated sections are finding it useful on ground made useless for ordinary crops by seepage; in Nebraska they utilize it in the sandhills, and in Kentucky they grow it on their clay hillsides to prevent washing.

Be Sure to Have a Compact Seed-Bed

Some of the very poorest clay soils are capable of producing a good crop of sweet clover, especially if these soils are of limestone origin. Like the clovers, it does best on a well-limed soil.

The one thing which must be remembered in preparing land for sweet clover is to get the seed-bed well firmed. On this account corn-stubble or potato-ground is preferable to newly plowed fields. If plowing is necessary, it must be done several months previous to seeding, so that the soil will have time to settle.

In the humid sections the best plan is to roll the land after seeding, as is done for wheat. In the semi-arid sections where it is dangerous to compact the surface soil, on account of the loss of moisture, a sub-surface packer can be used before seeding or the ground harrowed repeatedly with a drag-harrow.

Numerous successes are reported from seeding the sweet clover in spring-sown grain, but one cannot in this way expect to secure the most possible from the sweet clover, as the grain will retard its development.



Sweet clover in shocks ready for the seed-huller

Fertilizers are usually unnecessary for starting a sweet-clover field, but it is always best to lime the soil if it is not of limestone origin, and in all cases see that it is inoculated, if not naturally, then artificially, by scattering two hundred or three hundred pounds per acre of soil from an old sweet-clover patch over the field and harrowing it in quickly before the bacteria are killed by the sunlight.

A study of sweet clover shows that the seed falls on the ground in the late summer or fall and germinates for the most part the following spring. Information on the best time for seeding is incomplete and there is a great deal of conflicting advice on the subject.

Much of the process of storing up reserve food in the roots for use the following year is prevented by fall seeding, even when the stand is not ruined by heaving. The vigor of the second year's growth depends largely on this store of plant-food in the root. The advantage of fall seeding lies in the opportunity for thorough preparation of the soil or in the introduction of sweet clover into a rotation without the loss of more than one regular crop. In the Gulf States February is usually the most favored month for seeding.

The principal requirement is to delay seeding until the seed-bed is in perfect tilth. The seed can then be sown broadcast and harrowed in or put in with a grain-drill. These methods are formulated for fields in which the clover is seeded alone; when using it in rotations, it can be sown in the spring on fall wheat or with spring-sown oats or barley. Seeding with a nurse crop usually means the loss of one cutting of the clover during the first year.

The poor or delayed germination of the seed means that twenty or thirty pounds of the hulled, and at least five pounds more of the unhulled, seed will have to be used to insure a good stand. Home-grown seed has usually given better results than that secured from some other part of the country. Second and third trials are much more apt to succeed, owing to the soil becoming inoculated. Many farmers who have failed to secure a stand at first should try again on the same field, as it will gradually become inoculated.

Sweet-Clover Stacks Need a Waterproof Covering

The first year after seeding in the spring, if no nurse crop has been used, at least one cutting of hay should be obtained unless the field is pastured. If seeded in a nurse crop of grain, the nurse crop

should be cut for hay if drought threatens the life of the sweet clover, otherwise the field can be harvested for grain and some late pasturage obtained from the sweet clover.

The second year the sweet-clover plant should start growth early and furnish abundant early pasture, after which in the North a hay crop can then be obtained with the expectation of securing sufficient seed in the aftermath to reseed the ground, or the hay crop can be neglected and a seed crop secured instead. In the Southern States one hay crop and a seed harvest besides are possible.

Several of the uses of sweet clover have been mentioned previously. It is valuable for its honey-producing qualities, for hay, soiling, silage and pasture. Yields of hay in the North have been as high as one and one-fourth tons the first season and one and three-fourths in two cuttings the second season. In the South these yields are almost doubled, two and one-half tons the first year and over three tons per acre the second year.

The crop should be cut for hay before the first bloom-buds appear and cured very carefully, as it is quite difficult to conserve the leaves on sweet clover. It is usually best to rake it into windrows when rather green and place in cocks to dry. The hay does not shed water easily, hence if stacked some covering of slough-hay or canvas should be provided.

Live Stock Have to Learn to Like It

As a soiling crop sweet clover is not so valuable, on account of the bitter taste, which is more pronounced in green feed than in the form of dry hay.

As a pasture crop it has been quite a success. Hogs, cattle, horses, sheep and chickens thrive on it when given a little grain in addition.

There is very little tendency of either cattle or sheep to bloat when pastured on sweet clover.

The food which an animal refuses or eats with great reluctance is of very little value. So it is small wonder when farmers found their cattle refusing to eat the sweet clover which grew along the roadside that they marked it as a weed of no agricultural value.

A few men, however, backed their judgment with deeds and starved their cattle into eating some sweet clover or induced them to try it by sprinkling with salt for the first few days. It is to such men that we are indebted for our knowledge of its feeding value, for they straightway became its advocates.

Cows and sheep having once developed a taste for it ate the hay greedily, and the results from feeding it were nearly equal to those obtained with alfalfa and better than those with red clover.

Its extremely early growth in the spring, almost two weeks before the grasses or other pasture plants are offering green feed, makes the solution of its use as pasture easy. Turn the cows, sheep or hogs onto the sweet clover when there is no other green matter available, and they will eat it readily and come to like it. Then one has only to keep it pastured down or mowed off during the summer to insure a continuous succession of luxuriant green pasturage. Sweet clover contains the chemical coumarin, which has been known to physicians for hundreds of years as a corrective for disorders of the digestive tract.

How It Compares with Other Feeds

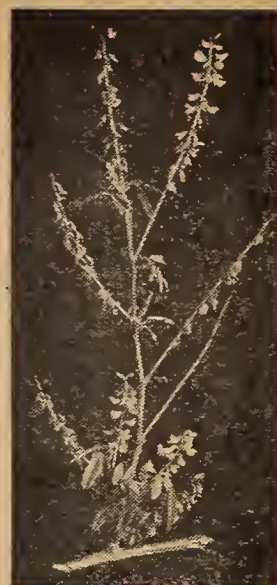
Protein is the most expensive constituent of farm feeds. Comparative analyses of sweet clover, alfalfa, red clover, timothy and cow-peas showed that only the alfalfa and cow-peas excelled sweet clover in percentage of protein, the alfalfa by one per cent. and the cow-peas by three per cent. Considered from the standpoint of digestible nutrients, we find the following comparative values for the different feeds:

Sweet-clover hay.....	\$18.49	per ton
Alfalfa hay.....	20.16	" "
Red-clover hay.....	14.12	" "
Timothy hay.....	9.80	" "
Cow-pea hay.....	19.76	" "
Shelled corn.....	20.16	" "

[CONCLUDED ON PAGE 17]



Cattle on sweet clover in Tasmania



Flowers and seed

A Paint Lesson

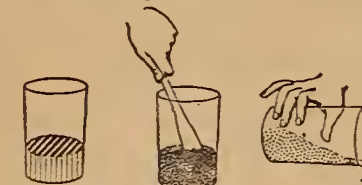


TO a paste made of white lead and water, add linseed oil and stir.

Watch the oil drive out the water! Presto! an oil paste instead of water paste.

Dutch Boy White Lead and Dutch Boy Linseed Oil rush together and cling together just that way on the house painted with them.

What chance has rain or snow to dissolve such paint?



White lead and water, with layer of linseed oil. Mixture of white lead, linseed oil and water. Water poured off, leaving white lead and linseed oil.

Dutch Boy White Lead—white in the big—any color you want to make it on the house.

Dutch Boy White Lead in steel kegs, 12½, 25, 50 and 100 lbs. Dutch Boy Linseed Oil, 1 and 5 gallon sealed cans. Ask your paint dealer. Let us send you "Painting Packet 25" full of facts every house owner should know about painting. Also "Handy Book on Painting," full of information for the man on the farm. We will include our catalogue of 100 beautiful stencils for walls.

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The Headwork Shop

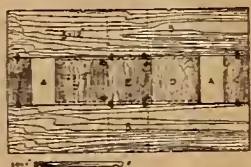
It's Motto: To Lighten Labor is to Lengthen Life

Mice by the Sack



NEW idea in this line came to me a short time ago, and it worked well. Take a common grain-sack into the bin or where the mice are nesting and living in the grain. Put the sack on the floor in a corner next to the wall. Prop its mouth open with an ear of corn stood on end. Lay a trail of shelled corn up to and into the mouth of the sack. Take a scoop-shovel and shovel the grain over the sack, covering it except for the mouth. The mice think the opening to the sack a nice dark place to hide in, and they scuttle into it. When they are all in the sack, take out the ear of corn, gather up the mouth and put the sack with its contents in a barrel of water. I caught and drowned eighty-two mice in three trials. **ELLA R. WILEY.**

Home-Made Wool-Press



HERE is a sketch of a good wool-press which will come in handy on any farm where sheep are kept: Take a piece of board one inch thick, twelve inches wide and fourteen feet long. From this cut four pieces one foot long and two pieces five feet long. Piece E (see sketch) is hinged to pieces D D by two hinges on each side and to the two pieces B B by two hinges on the other two sides of piece E. Pieces C C are hinged to pieces B B by one hinge on each end of C. A is a space six by twelve inches through which to reach and catch hold of D. Lay strings across B E and D E as dotted lines represent. Now lay the wool on the press with the side which was next to the sheep down. Raise B B and D D, and lay F F, which are sticks with notches, in the corresponding notches in B B so as to hold them together. Now tie the strings and open up the press. **M. L. THOMPSON.**

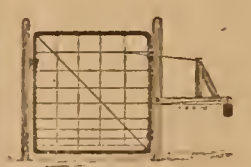
It Holds the Stick Firmly



TO SAW wood in a regular sawhorse or sawhuck the old way is to stand on one foot and hold the stick with the other, which is very difficult and tiresome. Now, to avoid this, take a heavy log-chain, throw the hook end over the stick, and hook it into or over the horizontal bar of the saw-buck so that the chain lies over the stick you are to saw. Draw up all the slack you can, and drop the chain, letting it hang loose, and you will find that you can use both feet to stand on and be comfortable, and your stick will be held firmer than you can hold it with your foot. When you wish to move the stick, simply raise the free end of your chain, hang it over the forked end of your buck, slide the stick or log as you wish, simply drop chain onto the stick, and go on sawing.

One can saw very nicely with a heavy log-chain, say one-half inch links, without hooking it, simply letting both ends lie on the ground with the middle, or rather the middle part, lying across the stick like the illustration. The heavier the chain is, the better of course. **HENRY W. HULL.**

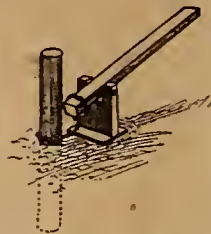
Gate-Weight That Stays in Order



THE sketch shows a gate-closing device which I have found very useful, as it isn't in the way and doesn't get out of order. It can be attached to any kind of a gate, but a light one does not require as large or as conspicuous a closing device or as heavy a weight.

For the average small gate take a one-hy-four strip about three feet long. Cut this into three pieces, sixteen, twelve and eight inches respectively. Fasten these together as illustrated and attach a weight to the projecting end of the sixteen-inch piece just sufficient to close the gate. **G. R. SLATER.**

A Powerful Post-Puller



THIS post-puller, the construction of which is shown in the accompanying illustration, is very handy on the farm. When the lever is pulled down, the chain, which is hooked loosely around the post, tightens, and the post is pulled out of the ground a little way. When the lever is raised, the chain loosens, and the chain drops down ready for a new hold. **HARRY E. WELLS.**

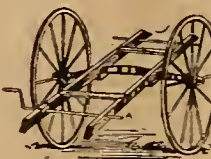
To Keep the Spade Bright

IF THE hired man carelessly puts the spade away without cleaning it, you may have a hard time cleaning it next time you go out to dig. But if you have been careful to put the cinders in a nice pile, not more than one minute will be required to clean the spade and make it as bright as a new dollar.

Simply dig in the cinders for a minute or so, shoveling them about as you do gravel and cement when mixing concrete, and the job is done. The cinders should be wet, as they are sure to be if exposed to the weather.

We learned this while shoveling cinders into a post-hole when building fence. It works like a charm. **E. P. H. GREGORY.**

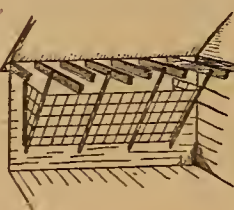
To Rewind Barbed Wire



THE sketch shows a very useful device for winding loose wire and taking up old wire fences. Procure an old buggy axle and wheels, and fasten two two-hy-four sticks five feet long to the axle as illustrated.

Provide the front end with a rod, the end of which is bent to form a crank. Two bent nails hold the block which had to be cut out to allow the rod to be put in place. When the spool is on, the nails are twisted so as to keep the rod in place. If the rod does not hold the spool tightly, use wedges. One man pushes, and the man in front turns the crank. Wire can be wound as fast as a man can walk and just as evenly as when hought-new. **CARL ACHILLES.**

Woven-Wire Cow Racks



CONSIDERABLE lumber and much work are required to build the ordinary wooden feed-rack. A better and cheaper one of wire can be built as follows: Take a sufficient length of woven wire the width and length required, and staple the bottom edge of the whole length of it along the wall of the barn about three feet from the ground.

Every eight feet under the wire nail poles two and a half inches in diameter, leaning out from the barn. Nail the upper ends to the rafters, or if the feeding is done out-of-doors brace the poles firmly. Pull the woven wire back from the building, since only the bottom of it is attached to it, and staple it to each of the poles.

Staple one end of the woven wire to the building, and cover it with a board so the ends of the wire cannot injure the stock. Stretch the whole length, and finish the other end like the first. If the rack does not hold enough, another width can be put above, observing the same precautions to make it tight and safe. If the meshes are about three or four inches in size, any kind of feed can be pulled through by the cattle. Be sure to use the woven wire, as the tied varieties have ends about the meshes which will hurt the animals' tongues. **F. H. SOUTH.**

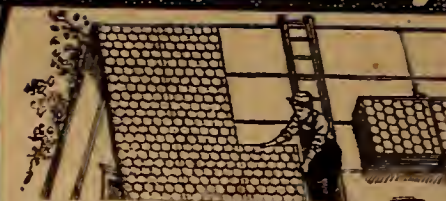
Headwork Winner—March Twenty-Ninth

The first-prize contribution in the Headwork Shop, in the March 29th issue, was "Cat-Proof Bird-House," by Paul Schulze.

Information Concerning Patents

IN ADDITION to the services now rendered subscribers who wish information on animal diseases, reliable commission firms and advice on general farm problems, FARM AND FIRESIDE has secured for its readers a source of reliable information on patents. A search through the records of the U. S. Patent Office at Washington will be made, when necessary, and free advice given concerning the patentability of designs submitted. All questions asked will be answered by a patent expert without charge or obligation. Correspondence may be made through the Editor of the Headwork Shop, FARM AND FIRESIDE. This service does not, of course, include the procurement of a patent or commercial negotiations of legal nature.

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Farm Notes

The Profits of Forestry

By J. Gordon Dorrance

DOWN in the southern Appalachians, in the mountains of western North Carolina, lies an immense estate embracing a wooded area of close to two hundred square miles. It is called Biltmore for its owner, George W. Vanderbilt of New York, and here for the past twenty years, first under Gifford Pinchot, later under Dr. C. A. Schenck of Germany, has been carried on a forest policy unique in scope and variety.

Forests have been cut down and planted up again, abandoned farm-lands have been reclaimed and afforested, the whole has been managed skilfully and well, and every year there has taken place an immense harvest of four million board feet of lumber, five hundred cords of tannic-acid wood and fuel, nearly a thousand cords of high-quality pulpwood and a thousand cords of tan-bark. Now at last the timber on only sixty-eight thousand acres has sold for \$816,000.

The average cutting limit for the whole is fourteen inches, and it is estimated that the large sum paid for the timber alone will more than pay for the original purchase price, clearance of titles and all expenses incurred in the management of this big tract for the last score of years, leaving Mr. Vanderbilt in possession of all the land and young growing forest without the outlay of a cent. Here certainly forestry has paid.

The large corporations are never behind the times, and the Pennsylvania Railroad some little time ago had planted upward of four million trees, on lands owned by the company, to provide for some of their future requirements in timber and cross-ties.

Some Good Crops of Fence-Posts

During the past few years "fence-post famines," so called, have induced the farmers of Indiana and some other Middle Western



Final cut of Scots pine at Eberstadt, Germany

Roots and branches cut up and piled and nothing wasted

States to practise forestry on a small scale with certain tree varieties especially adapted for posts. Osage orange, hardy catalpa and black locust have been planted at an average cost of only \$8.50 an acre, and many of these plantations have, at as early an age as fifteen years, yielded two thousand first-class fence-posts per acre. The great convenience, not to say economy, of a home supply of stakes and posts, combined with the resulting protection and shelter afforded by the young forests, enhance considerably the value of forest plantations for post production, plantations which are in themselves highly remunerative as investments.

Some By-Products of the Forests

Though probably we have not come to it yet, good woodland in Germany and many of the other European countries is often leased for the hunting privilege alone for forty to fifty cents per acre per annum, an added means of revenue for the owner. And it may be remarked that in this country the yearly value of our forest fish and



A well-managed woodlot

The weed trees have been taken out and a good stand of American white pine remains

game reaches the enormous figure of \$33,000,000. Deer killed in only six of the northeastern States furnish us every year

with food worth more than \$1,000,000, while raw furs exported annually are valued at \$8,000,000, and furs worth still more are kept for manufacture here. We know what most of the real forest products are worth, and these figures throw an interesting side-light on some of the by-products.

One more example illustrative of the financial returns of a forest investment: In the State of Vermont an old abandoned farm, worth at the very most \$10 an acre, was planted to trees at a cost of \$5, making in all an initial expense of \$15 per acre. Allowing an interest charge of six per cent.



Famous Black Forest of Germany

It derives its name from the dark-green foliage of its splendid spruces and firs

on the cost price for thirty-two years, the Norway spruce when finally cut off paid a net profit of \$201.70 an acre.

Wooded lands are held for the profits they yield, like other private property, and now the up-to-date farmer, and he is quite common, is just coming to the realization that it will almost always pay better to protect his woodlot while harvesting a timber crop than to utterly destroy it.

With his forests well managed, and his lands which will not grow agricultural crops planted in trees, then indeed will a very big phase of the conservation problem have been solved. Such a solution, while benefiting the community and the state, will quite properly profit the farmer most of all, for without forestry we cannot have agriculture.

Stand Up!

By G. Henry

THE stalk of corn which stands up means money for the farmer usually. The field of wheat which stands up is a good field of wheat.

The meadow that is "tall," that stands up ready for the mowing-machine—the meadow that "holds its head high" is the meadow which produces high-class hay.

The colt which holds his head high and looks you in the eye is the colt which brings a good price. The useful collie dog doesn't carry his tail and nose near the ground.

The beautiful rooster, well bred, valuable, proud father of fifty chicks and prouder husband of thirteen wives, holds his head in the air. He isn't afraid to proclaim his own greatness.

It is the sick field of wheat, the sick corn, the sick horse, the sick dog, the sick rooster, presenting drooping heads and low spirits, no matter how brilliantly the sun shines, which inflict sadness on your soul and sorrow in your pocketbook.

So consider the "Stand Up!" philosophy as it applies to yourself.

Don't be crushed by a little adversity. You are not a stalk of corn to be withered by an insidious insect. You are not a field of wheat to be laid low by a heavy hail or a strong wind. You are not a colt to become lazy and laggard because your internal machinery has gone wrong.

You have what we like to call manhood! You have a mysterious reserve force upon which you can draw—and on which, if you do draw, your head will automatically fly into the air and remain at an angle which wins respect from other men and forces success.

You can learn to respect yourself if you will only make yourself believe that you are worthy of respect, that you have a right to carry your head high.

Manure and Phosphate for Potatoes

By A. J. Legg

A YEAR or two ago I gave some figures to FARM AND FRESIDE showing the value of hen-manure for potatoes, as compared with commercial fertilizers. The hen-manure gave the best results in every trial.

It occurred to me that a mixture of hen-manure and acid phosphate would make a better fertilizer for potatoes than either alone, as the hen-manure is deficient in phosphorus, and it is inclined, also, to encourage the potato-scab. The acid phosphate supplies the phosphorus, and the acidity also discourages the scab growth.

I mixed the hen-manure with a liberal quantity of acid phosphate during the winter as it was made, and stowed it in barrels. I used about twelve pounds of sixteen per cent. acid phosphate to each barrel of hen-manure, and when I planted my potatoes I put a single small scoopful of the mixture in each potato-hill. The result was that I grew the nicest, largest potatoes that I have ever grown. There was very little sign of scab and they were large, smooth and solid.

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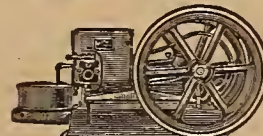
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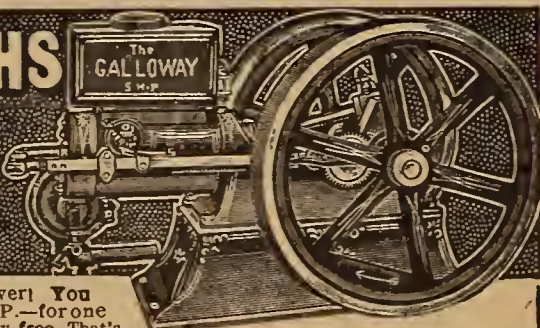
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Rats and the Bubonic Plague

By Clifford E. Davis

FARMERS as a rule are careless about the rat. They read of the bubonic-plague germs carried by the rat and agree about the danger of his presence, but neglect to make war on him. And the rat goes on his way, destroying all that he can reach and raising a prolific family as a side issue.

When a neighbor's farm becomes infested with rats, it is a menace to every farmer around, for rats travel even by day from house to house. A farm so infested should be compelled by law to make a general rat-hunt. Poisons won't do, for they are almost certain to drag it out where chickens, stock or dogs will get hold of it, or into grain-bins or corn, with dire results. Where there are good hiding-places, or chinks behind boards nailed on barns and stables, cats cannot reach them, though the cats watch ever so patiently.

An occasional trap of the spring variety will kill some, but set it where nothing else can get in it. Two things few rats can resist, be they ever so wary—strong cheese and fresh corn bread.

When you find a rat with its tail lacking an inch, apparently bit or broken off and leaving a wound, then that rat has bubonic plague. Soak it in oil, and burn the last scrap of the carcass.

The Department of Agriculture has found that the plague attacks rabbits also. Not long ago several were killed here in Maryland most terribly diseased.

The Barrel-of-Chaff Trap

As to the rat, clear away all old rubbish-piles wherein he can hide, organize a rat-hunt, and if necessary pay a premium for their killing. Where they are numerous, the barrel-of-chaff trap is best. Fill a barrel two thirds full of chaff, and scatter bread, meat and grain on top until you get the rats used to coming there. Then empty it, fill just that full of water, and put rocks in the bottom, leaving one sharp one above the surface with just room for one rat on it. Now cover all the surface of the water with a coat of chaff or bran.

The first rat in will climb on the rock, and the next rat will fight for the place. The racket will attract all the others, and you will have half a barrel of drowned rats in the morning.

Never try to force a cat to catch a penned rat, for it will not do so, and the rat will win or escape. The cat must catch the rat in her own way, or she gets frightened and fails. Clubs, traps and a good rat-terrier are the best; but clean them out, not next week, but NOW.

Practical Test for Acidity

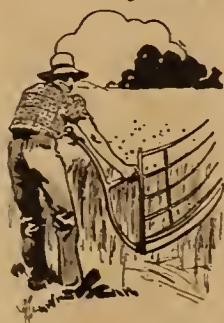
By B. F. W. Thorpe

MOST farm-lands need lime after thirty or forty years of cropping. Land kept in grass for hay is likely to become acid unless frequently manured.

The best way to test for acidity is to put a load of lime on a patch of land here and there at the rate of a ton to the acre, and see whether it is beneficial to the crops, especially the clovers and legumes. If ground raw limestone is used it should be put on at the rate of not less than a ton to the acre.

Large Getting and Small Giving

By Robert S. Doubleday



THE popular contention that labor-saving machinery has driven men from the farms to the cities is, in my judgment, entirely unsound. It is true that fifty years ago men sweated with the grain-cradle and bent their backs and calloused their palms with relatively primitive hand tools, while to-day, with modern farm machinery, greater results are achieved with less labor by proportionately fewer hands.

It is true that the average expenditure of time and labor for the production of a bushel of wheat has been materially lessened. There has also been a marked reduction in the labor of producing an average bushel of corn, and the same is true of the growing of potatoes and the harvesting of hay. But there has been no considerable saving of labor by machinery in the raising of the great staples of beef and pork and mutton.

Obversely, labor-saving machinery as utilized in the cities has entirely eliminated the cobbler and replaced him with the man at the machine who can, with at least no greater effort, produce twenty pairs of boots or shoes where one could have been made before. The telephone has displaced the messenger. The automatic cash systems have displaced the cash-boys. The subways and the elevated systems and the electric car systems have displaced many buses and bus-drivers and carriage lines.

And so we might continue citations with-

out limit. If increased productive capacity through the use of farm machinery has driven men from the farms to the cities, why has not the vastly greater increase of productive capacity through the use of machinery in the cities driven men to the country?

As a matter of fact, the aggregate production from the farms has not kept pace with the increase of production and demand. It has been confidently predicted that the time is not far distant when the United States will be importing wheat to meet its domestic requirements, instead of exporting it. And the prediction is based upon the safe criterion of measured crops and the established increase of known consumption.

Coupled with the erroneous contention to which I have referred we also find an accompanying view of marked peculiarity, most recently expressed to the effect that if we would "destroy all agricultural implements and forget how to make them," "back to the farm the hungry, barefooted populace will pour, with crooked sticks for hoes and ox-teams for power."

I find it difficult to reconcile this with good sense, and it seems to me to miss sound economics by only a trifle less than a thousand miles. Lessening the sweating in the corn-fields has not driven men into the sweat-shops of the cities. The whistle of the steam thrasher has driven no men toward the whistle of the factory. The riding plow has not crowded men on to the park benches. The harvesting-machine upon which the farmer rides in comparative ease and comfort and harvests more grain in a day than he could cradle or mow now in a week of hardest toil has produced no harvest of half-paid, underfed, ignorant and overworked city laborers.



They Overlook the Ethical Side

An abnormal social condition exists under which those who labor most arduously receive the least and farming is exclusively a matter of labor; not so much a matter of brawn entirely, as in years gone by, but none the less a matter of labor of both muscle and brain. The worn and ill-rewarded farmer and the farmer's son are confronted with the fact that, while they labor to the point of exhaustion for a meager and uncertain reward, there are at least some in the cities who have acquired the knack or had the fortune to get without giving, to acquire in great and generous measure without rendering an equivalent. Others have done it, then why not they? There are no such opportunities on the farm. The purely ethical aspect of it has never been impressed upon them.

The simple, easily ascertainable, all-sufficient truth is many farmers have made little more than a scant living. And men have no relish for labor which is so tragically underpaid, and in the field of which there is no opportunity, no lottery chance, of large gains for small gifts. They are willing to take a chance even though they don't know the game.

Average Returns, \$700

Two years ago the aggregate of farm crops was estimated to be worth ten billions of dollars. Whereupon the press yelped a strident paean for the "rich farmer," the farmer made affluent by protective tariffs, Philippine domination and other political devices, aided by the compelling influence of certain show-window statesmen with the gods of rain and sunshine and circumstance. As a matter of fact, what the farmers actually received at the farms was vastly less than ten billions. And the Agricultural Department, with its normal consistency, had included in the aggregate the hay and the grain and the cattle and the horses and the swine raised, blissfully oblivious of the fact that most of the hay and the grain raised by the farmers was fed to their own cattle and their own horses and their own swine.

But even with our calculations made upon a liberal basis the average returns to those engaged in farming did not exceed \$700 a year. When we have taken from this the cost of extra labor, taxes, interest and the inevitable incidentals, the net average income of the farmer is reduced to a shadow. Confronted with increased and rapidly increasing value of farm lands upon the one hand, and increased cost of what he is obliged to purchase on the other, he observes that his candle is burning briskly at both ends. Is it then remarkable that he leaves the dust and the relative isolation and becomes a strap-hanger and a flat-dweller, with an eye that he fancies keen, ever open for this chance at large getting and small giving?

And have we not then the country problem as well as the city problem, one as pressing as the other, and neither of them to be befogged by the element of machinery?



Stretching Wire Fences

By H. F. Grinstead

IT IS always best when practicable to set fence-posts early in the spring, a month before the wire is to be stretched. The posts thus become settled and more stable. To the novice it seems a simpler matter to fasten the stretcher-chain to a tree or post beyond the corner post so that it will not interfere with the work of stapling the wire to the corner post.

This is a great mistake; for, unless the stretcher is fastened to the corner post or end support of the fence in making the final stretch, it will slacken when the stretcher is removed, for the reason that the corner post has not been pulled solid against the brace with the stretcher. A stretcher with a lever at top and also at bottom is to be preferred to a single-lever stretcher, since with this the wire can be brought to the proper tension on uneven ground.

Staple the wire at every post, but not every strand. Wire stretched in hot weather will remain tighter than if stretched in winter. This is due to contraction and expansion of the metal.

The Price of Gas-Engine Fuels

By James A. King

This is the Fourth of a Series of Short Articles on the Gas-Engine

OF COURSE the price of gas-engine fuels is regulated chiefly by the supply and demand. That always regulates the price of anything, so we will disregard it in this discussion. We will also ignore the matter of freight charges for the present, because that depends on the distance one is from the refinery from which he buys his oil.

What Determines the Price to the Consumer?

So now we have the subject trimmed down to three items: (1) the cost of the crude oil to the refiner, (2) the percentage of each grade obtainable from the crude and (3) the cost of distilling and refining. The first of these is controlled entirely by the difference between the supply and demand. The third is dependent upon the methods used. So the really important item for us to consider is the second one, the percentage of the crude oil which is available in the form of each grade of fuel. And also remember that the demand for gasoline is growing much faster than is the demand for any or all of the others.

Why Kerosene is Cheaper

Are you surprised that kerosene can be bought by the barrel for a half to a third what gasoline can? And then remember that it adds several cents a gallon to the final price we pay in order to make that gasoline or kerosene water-white. And remember that taking out that coloring does not add materially, if at all, to its value for burning in an engine.

The refiner pays a certain amount for each barrel of his crude oil. It costs him a certain amount to distill each of these grades of fuel from his crude oil. He must have a certain average net profit from his business. So what fuels he does have a demand for he must sell at such a price that he can pay for his crude, pay the total cost of all the refining processes, and still leave him a profit.

He can easily sell all the gasoline he gets. In fact, he could sell more if he could get it. He can sell only a small fraction of the other fuels he gets. The surplus of these other fuels he must store up in expensive tanks that hold millions of gallons. The expense of storing this surplus and the interest on all this idle money must also be paid out of the price he gets for what he does sell.

Consequently, he must have a good big price for all that he can sell. He would be glad to sell all that surplus of heavy fuels left on his hands at practically what it costs him. That would be better than storing it and taking all the risk of loss from fire. So that gasoline, for which there is a big demand and of which there is a comparatively small supply, costs the consumer a big price, while naphtha, kerosene and distillates, of which there is an immense supply and for which there is only a comparatively small demand, are gladly sold at a small price. If all the internal-combustion engines in America to-day could burn any or all of these fuels, there would be an abundant supply. All fuels would sell for a much less price than gasoline does to-day, but of course for a little more than the unrefined distillates, the cheapest and most powerful of all fuels to-day.

Estimating Fuel Costs

Let us just make a little comparison on this subject of costs to the consumer. We will base the comparison on prices as they exist to-day. We will take the prices at the refineries so that the comparison will apply to all sections of the country, because freight rates to any point are practically the same for the different grades of petroleum fuel. In each case we will figure the fuel in barrel lots without considering the cost of the barrels, as it is the same in each case.

Water-white gasoline costs thirteen cents a gallon. Gasoline of the same flash-point and gravity test, but not water-white, costs

ten cents a gallon. Water-white kerosene costs five cents, and engine kerosene of the same tests which is not water-white costs four cents. Mid-continent distillate testing about 38° will cost only three cents.

Suppose a man has a little two-horse stationary engine which will burn about one hundred gallons of gasoline in a year. He also has an automobile which will burn at least three hundred gallons a year. On top of this he has a tractor that will burn five thousand gallons a year. This makes a total of 5,400 gallons of gasoline a year which he burns. We will suppose that he can burn the cheaper grade of gasoline costing ten cents at the refinery. Now, if all three of these engines were built to burn distillate, costing three cents at the refinery, instead of having to burn gasoline, he would have to burn only eighty-four per cent. as much fuel, or 4,536 gallons. This would cost him only \$136.08. So that, by being able to burn this heavier, cheaper, more powerful fuel, he would be saving \$403.92 a year.

Better be a little lazy than so smart that you always overdo.

The well-tilled corn-field is not disturbed by political agitations.

Debt is a brake on the wheels of progress. Get the brake off as soon as possible.

Before starting any farm machinery see that all the parts are in good working order, and safe.

Loans for Farm Improvements

[By R. H. Wood]

SOME bankers, it has often seemed to me, have been slow to adopt modern ideas. In many cases they have retarded agricultural development. I have known them to refuse loans to good farmers, and upon good security, for the purchase of fencing, silos, lime, fertilizer and improved live stock. I have known them to advise farmers to stick to wheat, potatoes, corn and beans. In the South they advised planters to stick to cotton and tobacco.

I know of a case where a man has borrowed five hundred dollars for a saloon license, with very little trouble and little security, yet the same bank advised a good farmer against investing one hundred dollars in a pure-bred bull calf. Fortunately there are bankers whose advice is better.

Short Loans are of Little Value to Farmers

Let it be noted, however, that there is much difference in men as to the use of money. Some men can make better use of five hundred dollars than others can make of a thousand dollars.

A certain man has eighty acres of fair land. He has such improvements as he has been able to make. His land cost him sixteen hundred dollars and is worth the money. He wants to fence the entire farm and to cut it into two fields. This will give him plenty of pasture and protect the crop upon his tillable land. He has two cows and wants to buy three more. He wants part of a car of ground limestone and some ground phosphate rock. He wants a little clover-seed and a couple hundred apple-trees. He believes in good fences, good tillage and good stock. He says that six hundred dollars would put his farm upon a paying basis. I firmly believe that with the improvements he desires, put upon the place as he would put them there, his farm would be worth over three thousand dollars.

The local banker does not loan money upon farm lands. He lends entirely upon secured notes and chattel mortgages. He loans for short time only, sixty days being the usual period. My friend, the eighty-acre farmer, has good security for six hundred dollars, and if he could get it for five years at six per cent. he could put his farm upon a paying basis.

Farmers' Money for Farmers

This is a typical case and a fair one, for this farmer is a capable and intelligent man, and he needs the money.

Again, to-day I was talking with a well-to-do farmer who has a large farm and most of the modern improvements. He said, "Of course, as for myself, I am past the need of such loans, but I have seen the time when such a loan as your friend desires would have been a great advantage to me. It would have set the date of my income from five to ten years ahead."

"To-day I have a little money in the bank, and I wish that some way could be arranged that farmers' money could be loaned to farmers."

These two cases illustrate conditions, demands and possibilities.

What the farmer wants, and what, eventually, he will have, is prompt loans without any disgrace or embarrassment, upon reasonable real-estate security and at reasonable interest.

This he wants, and with payments so arranged that he can feel safe in going ahead and improving his farm. Any system that does not satisfy these demands will not be of any permanent benefit. If the farmers but knew the value of their own assets, they would not be long in combining to devise a system that would be safe, stable and satisfactory.



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can be raised cheaper and will produce more eggs on our small farms in the Sacramento Valley, California, where green feed, such as alfalfa forms two-thirds of the diet and where they forage in the field every month in the year. On a 20 acre farm with cows and hogs you can raise one hundred hens with almost no extra cost.

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Pres. of Board of Health.

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"From overwork, I suffered several years with malnutrition, palpitation of the heart, and loss of sleep. Last summer I was led to experiment personally with the new food, which I used in conjunction with good rich cow's milk. In a short time after I commenced its use, the disagreeable symptoms disappeared, my heart's action became steady and normal, the functions of the stomach were properly carried out and I again slept as soundly and as well as in my youth.

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"There's a reason," and it is explained in the little book, "The Road to Wellville," in pkgs.

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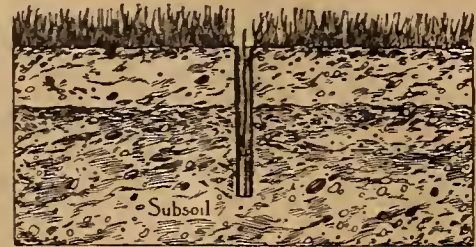
Crops and Soils

Planting Trees with Dynamite

By Omer R. Abraham

THE use of dynamite for tree-planting was probably first used on soils where there were boulders to be broken up and gradually its use became wider, taking in other soils. Some claim that it is beneficial to any soil, but I am of the opinion that its use should be confined to soils underlain with shale, rock or a close, hard subsoil of the nature of hardpan. In such cases, when properly used, the results will be uniformly satisfactory. Its proper use is the one point that determines success and failure. My experience with orchard blasting is briefly this:

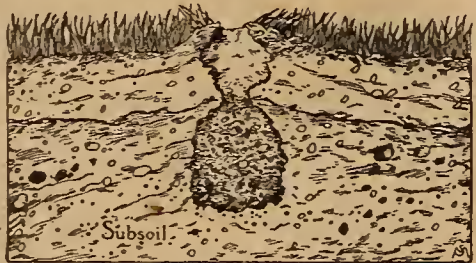
As a boy I had always been cautioned not to get near a stick of dynamite, and I



One-half stick thirty inches deep ready to tamp

obeyed. Years later I studied what I could find, in reference to dynamite and its use, and with the assistance of a neighbor I learned how to use it. While I handle it now a great deal, I always remember that it is dynamite and am careful with it.

My first experience was in orchard blasting, and every day I learned something new. I soon found out that it was very necessary that the ground be moderately dry in order to get the best results. But it was in the spring, the trees were on hand, they had to be set and I could not wait for the subsoil to get dry. With the subsoil in this condition I found that one half of a stick, which is one fourth of a pound, was too much when put to a depth of thirty inches, or even twenty-four inches, for the blast would make a hole in the subsoil as large as a barrel and just the shape of a jug. The



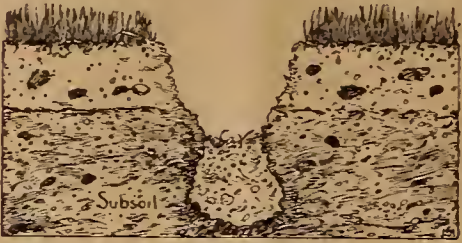
Excavation made by one-half stick, tamped, thirty inches deep in wet subsoil

opening for a foot under the surface of the ground was no larger than your fist, and as it was necessary to fill the bottom of the hole with soil this necessitated cutting the neck larger. I found that this was jammed so hard that it was nearly impossible to cut through it with a spading-shovel. When the charge was placed at twenty inches, the hole was as large at the surface as anywhere, and more dirt was thrown out; in other words, it did not leave a jug hole at the top, but tore the top out. I obtained the best results with one third of a stick, which was one sixth of a pound, placed about twenty inches deep. But I determined to blast no more when the subsoil was wet as it is in the spring.

Last fall, after quite a lot of dry weather, I began on an orchard that will be set this spring. As the subsoil was drier, I put the charges down thirty inches, using one half a

stick, which I tamped tightly with the most adhesive dirt that was drilled from the bottom of the hole. I got good results, the ground cracking instead of jamming. This spring we will work the loose dirt over with shovels till it is fine and then set the tree. The blasts were made exactly where each tree was to be set.

Some orchard blasting, we understand, is done without tamping dirt over the dynamite. I object to this because the fullest



Excavation made by one-half stick, untamped, thirty inches deep in dry subsoil

force is not obtained unless the charge is closely confined. When the charge is not tamped, part of the force comes up the untamped hole.

Approximate Cost

The expense of blasting holes for tree-setting is about as follows: Each thirty-inch charge will take one cap, about twenty-two inches of fuse and one-half stick of dynamite. At wholesale, in lots of about fifty or one hundred pounds, forty per cent. dynamite will cost about thirteen and one-half cents per pound. I used a single-tape fuse, which costs about forty cents per one hundred feet, and caps costing seventy-five cents per one hundred. I intend to try cotton fuse, which is cheaper, and said to be as good for dry work.

Making Ready for the Blast

We now bore our holes, then make up the charges at some convenient place. If it is



Effect of one-half stick, tamped, thirty inches deep in dry subsoil

cold, we make them up in some room where it is comfortable, attaching cap and a piece of fuse the proper length, and tying same, so that we can carry a whole bunch of them by their fuses and drop one at each hole. The next operation is to tamp them, then split the fuses so they will light easily. I find the best lighter to be a dry corn-cob which has burned till there is a coal on the end.

Just one whiff of the smoke following an explosion is sufficient to give one a headache, so it is well to let the holes air a while before attempting to fill the hole or set the tree. If trees are set before the holes have time to thoroughly settle, they will have to be set shallow, as the soil gradually sinks for a few weeks.

EDITOR'S NOTE—In spite of the confidence and apparent safety with which experts handle dynamite or other explosive, there is always an element of danger.

Study the directions which come with the particular strength of explosive used. Do not borrow or loan dynamite without a thorough mutual understanding concerning the proper method of handling, and most of all BE CAREFUL.

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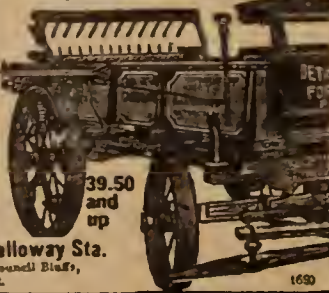
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Garden and Orchard

Hubbard Squashes and Intensive Gardening

By James B. Morman

THESE should be a dominant crop in carrying on intensive gardening, though many crops may be grown together without injury to each other. The two points to be considered are rotation and maintenance of soil fertility. When these are observed in gardening, the same land may be used almost continually without danger of deterioration and with profit.

Sometimes difficulties confront us from insect pests. This is particularly the case in raising Hubbard squashes. This is no longer an easy crop to raise. The main difficulty is to overcome the squash-borer. This pest is not limited in its range, but it practically extends to all parts of the country. The borer is the larval form of a moth which lays her eggs on the vine.

When the eggs hatch, the little grub bores into the main stem of the plant where it lives and feeds on the internal tissues undetected and unsuspected until the vine withers and dies. Even then many gardeners do not know the cause of the death of their squash-vines.

The Preparation of the Ground

It is of some importance, therefore, to be able to raise a crop of Hubbard squashes under these conditions. My system of intensive planting and culture, which experience has proven to be quite successful, is briefly as follows:

The piece of ground intended for the winter-squash crop is first put into early potatoes. During the winter the land is well top-dressed with manure. Chicken-manure is good for this purpose, no other kind of farm manure being better for the garden.

In spring, as soon as the land can be worked, it is plowed and planted to an early variety of potato like the Irish Cobbler or Early Rose. The seed-potatoes are carefully put on trays in the fall to start vigorous sprouts, and the potatoes are planted as early as possible, in order to force them to the front. By this method the potatoes are in bloom usually about the last of May or



A good yield—nearly 600 pounds on a garden plot 35 by 125 feet

first week in June and have been hilled for the last time. This is the time to plant squash-seed.

Between alternate rows and at distances of about six feet apart, I make hills with some rich soil. For this purpose the scrapings from hen-yards are excellent. An extra seed or two placed in each hill and an occasional extra hill are an advantage, since some vines will generally be ruined by borers notwithstanding what measures are taken for their control. Under favorable weather conditions the seed will germinate quickly and make a vigorous growth.

Between the hills of squashes sweet corn is planted at three-foot intervals to finish out the rows as well as in the alternate rows not planted to squashes.

Three Crops Growing at the Same Time

Thus, while the potatoes are maturing and the tops begin to die down, the young squash-vines and sweet corn are making rapid growth. When the potatoes are mature, they are taken up as quickly as possible by hand digging, care being taken not to disturb the other two crops. The balance of the ground is then sown to turnips, kale or other winter truck the seed of which can be sown broadcast and raked in. A good top-dressing of manure will be beneficial. For several years past I have confined my third crop to turnips, which is usually a sure crop for household use or for marketing. Moreover, the tops furnish an excellent green feed for the fowls during late fall and early winter.

Besides one crop (potatoes) already off the ground, there are three other crops (winter squashes, sweet corn and turnips), all growing without interference on the same ground at the same time. As regards the squashes, which I regard as the dominant crop in this fall garden rotation, a single cultivation around the hills in the early stage of their growth is about all that is required, since the digging of the potatoes not only keeps down the weeds, but puts the ground in excellent tilth for the squashes and other crops. When these crops grow vigorously,

weeds have little chance to make headway against them even if not hoed.

The advantages of this system of crop culture are: (1) the young squash-plants are partially screened by the potato-tops and to a considerable extent are protected from attack by the parent moth of the squash-borer; (2) they make their most vigorous growth between the two broods of moths which occur throughout a wide range in the United States; (3) the three crops have soil in good tilth from which to draw nourishment, and (4) it forms a systematic plan of garden rotation which, on small areas, affords an opportunity for the best practice of intensive culture.

Under this system of gardening I have never failed to secure a paying crop of Hubbard squashes even in very dry times. But the season has much to do with the yield of all the crops. The highest yield of winter squashes secured was 697 pounds on a plot 35 by 125 feet. Last year the yield was 589 pounds on the same amount of land, and the photograph shows the bulk of that crop. For thorough maturity and excellent quality such a crop could hardly be surpassed under the most favorable conditions of soil: 1 climate.

There was a total of seventy-two marketable Hubbards with an average weight of eight and one-fourth pounds. At retail prices such a crop would be worth about \$175 an acre for squashes alone. Then there were the sweet corn and turnip crops in addition, of which the stands have always been good under this system of culture. Moreover, these crops together are excellent for conserving the moisture in seasons of more or less dryness.

If the fertility of the soil be conserved by the application of sufficient manure, such crops form a good rotation and a profitable system of intensive gardening.

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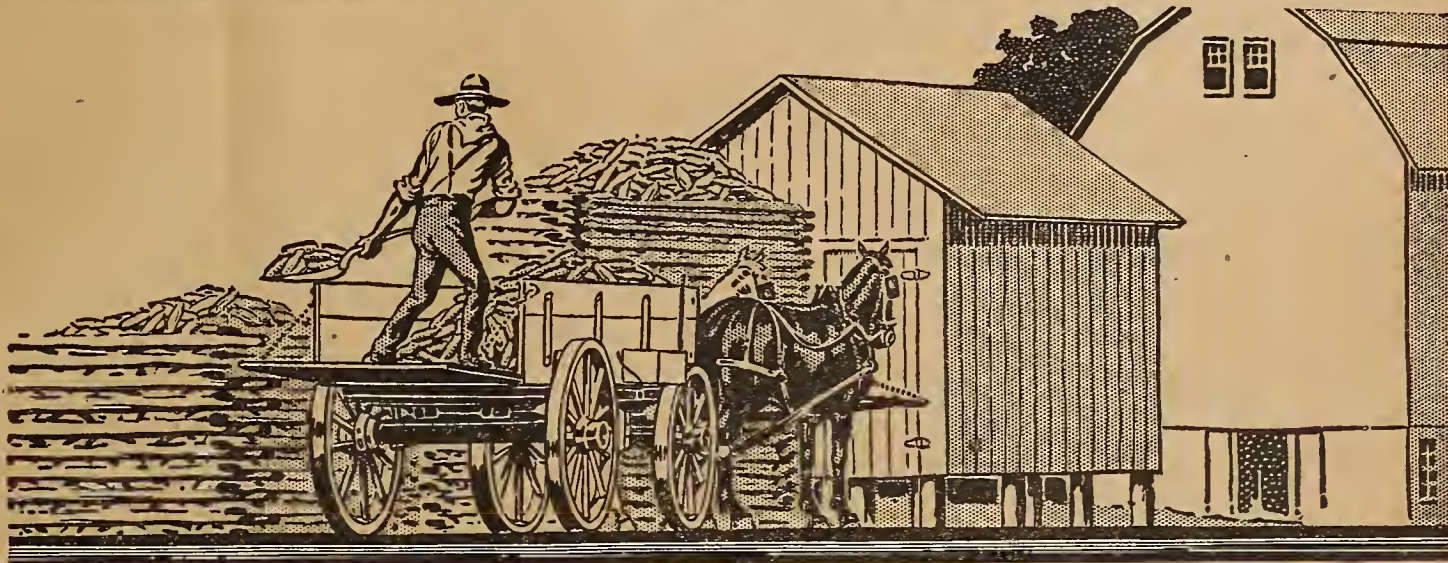
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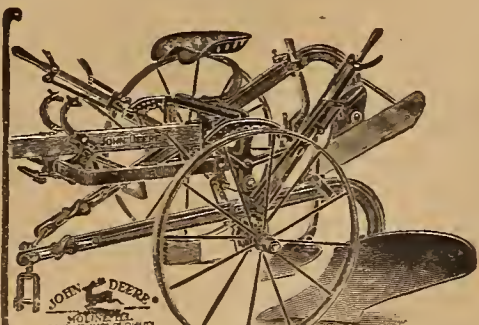
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One, Two or Three Years?

What is the Best Age at Which Trees Should be Set?

By O. M. Taylor

FOR several years, nurserymen have been taxed to their utmost to furnish trees to fill their orders for the most popular varieties. Fruit-growers are desirous to start right, and are ready to plant trees of any age if it can be shown that trees of that age are most desirable. Authorities differ as to the best age at which to plant trees. My object is to briefly set forth some of the claims made regarding the age at which to set trees.

From a nurseryman's standpoint it is more convenient and economical to grow a solid block of trees up to the usual time of digging. That is, one year with peaches, and two years or three years for the other fruits, depending on variety and method of propagation. They want to avoid as much as possible the necessity of sending a force of men into the one-year block to dig by hand the best trees. The tree-digger does much more rapid work, and the cost of growing the stock is lessened, if all the trees are dug at one operation.

One and Two Year Old Trees Compared

One-year-old trees are the cheapest; they come into bearing about the same time as older trees, if not sooner; the root system is not so badly injured in transplanting, making the trees less likely to die, and causing the yearlings to recover and to start into growth more quickly; the height of the trunk and the general formation of branches may be started to suit the grower, and the branches developing the first year may often be used to form the framework of the tree.

A two-year-old tree is said to bear sooner than a yearling. It is usually a larger, and more vigorous tree, and is less likely to be broken down the first year after the orchard is set. Some growers have neither the time nor the skill to form the head of the tree; it is formed for him by the nurseryman in the two-year-old tree.

It will be noted that the age of bearing is in dispute. There does not appear to be sufficient data at hand to settle this question under all conditions. Strong claims are made, and with some show of reason, that one-year trees properly handled may be made to bear fully as early as, if not earlier than, two-year-old trees. It costs the nurseryman more to grow a tree several years, so that a higher price must be charged for the older trees, and the expense of transportation and of setting is also increased.

Those who desire low-headed trees often find it necessary to purchase one-year-old stock, heading to suit themselves, as older trees have their heads formed in the nursery and are often too high for the purpose desired. Strong, vigorous, one-year-old trees are often in a few years fully as large as some trees two years old when set. Not all yearling trees, however, branch uniformly, and such trees require more care in pruning to bring the orchard into a uniform condition.

Much Depends on the Variety

The fact must not be overlooked that some varieties require three years to make desirable trees for setting, and yearling trees of strong growing varieties are often as large as two-year-old trees of other varieties. Much depends on the habit of growth of the variety. Each kind is more or less characteristic in its growth. Many trees have naturally poorly shaped heads, crooked trunks or a poorly developed root system. Inferior stock, however, of all varieties should be avoided. Such trees may be bought at a low price, but in the end are most expensive.

The tendency to-day, in many places, is toward the purchase of one-year-old rather than two-year-old trees. We, however, must

be governed by circumstances and by the habit of the variety. Size alone, or even age alone, is not an index of the true value.

It is probable, all things considered, that low-headed two-year-old trees, well branched, well grown, but not overgrown, are most satisfactory for the average orchardist who is not an expert along this line. If suitable stock of that age cannot be secured, the one-year trees will usually be found satisfactory. We must not lose sight of the fact that age is not one of the most important factors of orcharding. There are many successful orchards of one, two, or even three year old trees when set. Age or size is not so important as the thorough preparation of the home of the tree—the soil—and the amount of intelligent care given both to the tree and to the soil, especially in regard to pruning, spraying, applying plant-food and the character of cultivation given.

Uniformity in Fence-Posts

By W. F. Wilcox

OUT here in Colorado, cedar is used for posts, and the big end is set downward in contrast with the eastern method of sharpening posts and driving them into the ground each spring.

Where cedar is plentiful, one sees some queer-looking fences with posts of every length. One post will be about five feet out of the ground, the next eight, and so on. It makes an ugly-looking fence, to say the least.

Last year my neighbor and I put up a line fence through an alfalfa-field, and after the posts were set we sawed them off an even length. We set good posts of uniform size, and the fence was widely commented on as adding materially to the value of the ranch.

Let the plow run deeply, if it isn't slate soil.

This spring make the canvas caps for next summer's alfalfa.

The pessimist hears no bird-song but the caw of the crow.

Money will not buy happiness, because those who have happiness haven't any to sell.

The Kingfisher

By H. W. Weisgerber

I WAS hurrying home one late September evening after a Saturday afternoon's ramble afield and awood, and while going past the breast of a dam that walled up the waters of a spring-run, I was startled by the loud, rattled call of a kingfisher directly overhead.

Its suddenness surprised rather than frightened me, for I immediately recognized the notes as those of our fisher. It was time for birds to be roosting, for darkness was fast settling over the land. But I find that Professor Dawson, in his "Birds of Ohio," says that they are given much to "fishing" in the nighttime when they have young in the nest, so as not to attract too much attention by entering their tunnel



nests in the clay banks. And so, no doubt, this bird that I had heard was only getting his evening meal—a late supper, so to speak.

Our belted kingfisher comes early in the spring and remains late in the fall, and where there is open water often remains through the winter.

His range covers the American continent from the Arctic regions to Panama. Only one other species, the Texas kingfisher, enters our country; and less than a dozen species are found on the two American continents. The family proper belong to the Old World, and especially the Malay archipelago, where they are most numerous. In all there are nearly two hundred known species, so we can consider ourselves fortunate to have at least one of them.

Economically they may be considered as worthless, but they do no material harm; for no doubt the most of their food consists of "shiners," which are valueless and are only food for other larger fish. But as an esthetic factor he looms large above the horizon and therefore he should be protected from the gun of the fowler.



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GARDENING

BY T. GREINER

Huckleberries Under Cultivation

THERE may come a time when we learn how to grow huckleberries in our own gardens. It has not arrived yet. We have this information, however, that the huckleberry or blueberry plant is very particular as to soil conditions. The soil must be somewhat acid. I have made one trial, and have one highbush huckleberry on my upland grounds now more than twenty years old. It has borne a few berries for many years, but the birds always get them.

There were so few, the loss was not great. If an inquiring reader is bound to try his luck with the highbush huckleberry, he should take up some good plants from their native habitat, set them in some spot where the soil is a little sour and give a good mulch of woods earth or perhaps sawdust. This will be preferable to cultivation.

Sowing Tomato-Seed in the Open

I frequently sow cabbage-seed right in the hills afterward thinning to one plant and allowing this to make the mature head. In a warm location, a similar plan might be followed with tomatoes. Drop three or four seeds in the hill, and cover with a little soil. I usually do this, in case of cabbage-seed, with the foot and then firm the soil over the seed by pressing the sole of the foot lightly down on it.

It is a common thing to have tomato-plants spring up in early summer in our garden-patches, where tomatoes had been grown the year before and a lot of ripe fruit was allowed to decay. Even here in western New York, where the summers are short and often none too warm, we sometimes gather quite a lot of ripe tomatoes, especially of the earlier varieties like Earliana and its strains, from these volunteer plants. They grow particularly in early sweet-corn patches, where the tomatoes have a chance to grow and mature after the corn-stalks have been cut. The better way, however, is to start tomato-plants early under glass and transplant to open ground.

Japanese Pie Pumpkin

The statement that the Japanese pie pumpkin seems to be less subject to beetle attacks than other varieties induces a reader to ask where he can get the seed. My advice is, don't fail to send for the catalogues of a number of good seedsmen. You can get a lot of information by studying these interesting publications.

The Japanese pie pumpkin is listed by almost every good seed-house in the country. The large neck of the Japanese pumpkin is all solid meat, and the quality is fine. The seeds show peculiar indentations resembling oriental letters or writings. Years ago I also had a Japanese squash which seemed to be little troubled from bug and beetle attacks.

The Need of Advertising

Western apple-growers are great advertisers. They make a big show with their showy fruits, and let everybody know that they have them. That is the great secret of their success in selling at good prices. The Eastern growers are beginning to recognize this. They must understand that no business can flourish without advertising.

Show and tell people, and let them know how much better these Eastern fruits are than the Western product, also that fruits are not a luxury but a necessary article of food, and the demand for our fruits will increase immensely, and make the industry prosperous beyond our wildest dreams.

What Lime and How Much

Only the best, in fact a special, lime can be used for making the lime-sulphur solution. Any lime will do for liming land. It may be fresh or old, water-slaked or air-slaked, so long as, for even distribution through the soil, we have it in dry or dust form. If we buy fresh-burnt (stone or lump) lime, a ton of it will be fully sufficient for one acre.

This means about twelve and one-half pounds to the square rod, or for a little home garden, say forty or forty-two feet by one hundred feet, about two hundred pounds. If the lime is old, especially if air-slaked (carbonate of lime), it is, of course, much weaker than the other and nearly double the quantities named may be used.

How to Apply Lime

The addition of water, or exposure to rains or damp air, will soon put the lump lime into perfect powder or dust form. It is then ready for application. The farmer who has a fertilizer-drill meets with less difficulty in applying the lime evenly over and through his land. If the gardener can get a

farmer of his vicinity to apply the lime, it is by far the best and easiest way to get out of a mean job. For such it is, if the application has to be made by hand. I don't like it, but I go at it with a will rather than do without the benefits I can secure from the lime. It means wearing old clothes. It means inhaling some lime-dust. It means a good bath and change of clothes afterward. The lime is carted out and distributed in barrels or boxes over the area to be treated. I fill a coal-scuttle with lime, dip the lime out with a tin hand-scoop holding about two quarts, and scatter it as evenly as I can over the land as I go along. It does not do as good a job as can be done with the drill, but it will do.

River Deposits for Garden

The deposits from a river bottom, left by the receding waters, are often very serviceable for adding to a garden soil, or filling up lower places to be used for growing vegetables and small fruits. A garden soil made in this fashion may, after some time of exposure to air and weather, be quite productive without special treatment or manuring, at least for a time. A small application of stable manure, say five or six loads to the acre, may be useful, as it is in case of new muck-land, for the purpose of starting bacterial action, and fertilizers may afterward be depended on to keep the land in productive condition.

An occasional lime application will do good, or be needed in most cases. Stable manure of average quality, compared with commercial fertilizers, has a value of about two dollars per ton. In case the humus supply in a given soil appears to be insufficient, a crop of vetch, clover, Crimson clover, soy-bean or cow-pea may be grown and plowed under.

Delicious Limas

No garden crop is easier to raise than Lima beans, provided you give them rich

warm soil, and the summer is warm, and long enough. Where you can raise the common varieties of field-corn and ripen the bulk of the tomatoes on early-set plants, you have the chance to raise and ripen the pole Lima. The sandy loam in New Jersey is good, and we can raise nice Limas here on our stronger loams in western New York.

Bush or pole Limas? I raise the pole Limas only. The bush Limas do not yield enough. Always plant as soon as the ground has become warm and dry enough in spring. If planted in cold or wet soil, the seed-beans will rot. If once well started, the plants can stand a moderately cool spell afterward. If your summers are rather short, start the plants under glass in paper pots or boxes a few weeks before they could be planted in open ground; then transplant when suitable weather has arrived. You will get Lima beans in August, or even in July.

Winter Radishes

Easy to grow, good to eat, good to sell at a fair profit—such are winter radishes. You can have them black or white, long or short, mild or more pungent—just as you like them. Sow seed of California or Russian Mammoth if you prefer mild flavor and white color. Sow seed of the Spanish, black or white, long or short rooted, if you want a radish of stronger flavor. The white "Mammoth" winter sorts often reach very large size.

I have never had much success in growing good edible roots of the new Japanese winter radish with the strange name (Sakara-jima?). If seed of this is sown early, it seems to make a long spindling root and to go to seed speedily. Perhaps it will do better if seed is sown late in July or in August.

But we cannot grow winter radishes as thickly in the row as summer radishes. Early and severe thinning is essential for success. Two to three inches distance between the plants in the row is none too much. And don't neglect careful and thorough weeding. Radishes respond well to good care and you will be well repaid.

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"At other times I had severe headaches; stomach finally became affected and digestion so impaired that I had serious chronic dyspepsia and constipation. A lady, for many years State President of the W. C. T. U., told me she had been greatly benefited by quitting coffee and using Postum; she was troubled for years with asthma. She said it was no cross to quit coffee when she found she could have as delicious an article as Postum."

"Another lady, who had been troubled with chronic dyspepsia for years, found immediate relief on ceasing coffee and using Postum. Still another friend told me that Postum was a Godsend, her heart trouble having been relieved after leaving off coffee and taking on Postum."

"So many such cases came to my notice that I concluded coffee was the cause of my trouble and I quit and took up Postum. I am more than pleased to say that my days of trouble have disappeared. I am well and happy."

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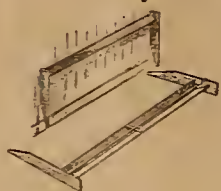
Philadelphia Chicago



Poultry-Raising

Self-Cleaning Trough

By Thomas B. Buffum



POULTRY appliances occupying floor space are an expensive luxury, wasting the amount of flooring and roof over them. The illustration shows a floor-clearing, self-cleaning hopper that leaves all the floor to the hens, except at feeding-time.

For the trough use hoards one inch thick and of the length desired, having one hoard six inches wide and the other seven inches. At each end of these hoards nail a board cleat crossways, not only to stiffen the sides, but to nail the end to. Nails driven into the ends of hoards do not hold firmly.

Now nail the bottom of the wider hoard to the edge of the narrower one, and you have a right-angle trough with sides of equal height.

For the ends use two one-inch hoards seven inches wide and three feet long. Nail these to the hoard cleats on the ends of the trough in such a way that they will protrude only three inches beyond it in front, leaving the excess length behind, to act as legs when the trough is not in use. Have the upper edges of the ends two inches above the top level of the trough. This forms the trough proper. To keep the hens out and stiffen the trough, nail a two-by-two-inch strip across the top of the trough midway of its length, then nail a one-by-two-inch strip from end to end along the middle of the top, resting on this crosspiece in the middle.

When the trough is not in use, tip it up on its legs against the wall and your trough will clean itself of any little surplus feed.

Selling Eggs and Gloves by Parcel Post

By Paul R. Strain

THE parcel post is impractical for selling eggs with the prices prevailing in my locality. On the second day of January I mailed the first fresh-laid eggs on our rural route from Wellshurg, West Virginia. The next day they were the first eggs delivered in Crafton, thirty miles away, one of the suburbs of Pittsburgh. The box held fifteen eggs and cost me fourteen cents to mail. Counting difference in price at home and destination, I lost my container and one cent by the transaction, saying nothing of correspondence. Since then I have found I can ship cheaper in lots of four dozen, which, with packing, weighs ten pounds and costs thirty-two cents postage.

But my regular egg trade will not stand the added cost of containers or returning them, together with the first cost of postage; nor can I hear it, so I will continue to deliver to my local trade in the old way.

I have, however, a fair trade in canvas gloves which we make at odd times in our home, having worked up over five hundred dollars' worth of cloth in that way. These I find will go well by parcel post, as no one will mind the five or ten cents extra on the dozen pairs when they are getting them both better and cheaper than at the stores.

But if I could not sell any of my products I would still value the parcel post highly because it saves me so many trips to the express office. Already we have bought and had delivered to us blankets, hardware, maple-sap buckets, underwear, stationery, drugs and dry-goods.

Things That Have Helped with Poultry

By E. L. Vincent

THE past year has been the most profitable one we ever had with poultry. The boys in charge of this branch of the farm work have taken more eggs from the houses and sold them at better figures than ever before. I propose to relate some of the things which have been of value to us in reaching this end.

In the first place, our oldest son, who is at the head of the farm operations, associated

himself with a brother-in-law who has taken a course in agriculture at Cornell University. Having a natural liking for poultry, he suggested that a little partnership might work to the mutual advantage of both, and such has been the case.

Good Birds to Start With

When this young man came to the farm, he brought with him some well-bred White Leghorn chicks which had cost, when only a few days old, sixty cents each. I never saw finer hens than these have developed into.

So to start with we had good stock. Then this young Cornell man brought some good methods with him, especially as to feeding and caring for the birds. I was pleased the other day to note how clean the dropping-boards in the houses were. Every other day these are cleaned, and so far this year they have not lost a single bird through sickness.

They Ate Up a Gravel Floor

Another thing which contributed to the success of the boys were new houses built on the most approved plan. One of these, fifty feet long, was put up in the fall of 1911. It has wide openings covered with muslin for ventilation. Cold weather came before the boys could finish the floor, but they drew in piles of meadow-stones and covered those with gravel and some earth. The birds ate their way right down through the gravel to the stones. If we needed any proof that hens need and must have lots of grit, we found it in the way those birds took hold of that gravel.

After the experience of an unusually cold winter the boys found that the muslin-covered windows were not quite enough to furnish the best ventilation. The houses were damp a good share of the time. So when a year later we added fifty feet to the first house they did not depend on the openings, but ran some ventilating shafts from the inside of the house, the lower end being rather less than a foot from the floor, up through the roof.

Another good feature about this last house is that it has a cement floor all over the bottom. The boys drew in plenty of field-stones, packing them down well and covering them with gravel, as in the first house. Then over all a good thick coating of cement was laid, making a clean, dry floor.

These houses are fitted out with hoppers and drinking appliances such as seem best adapted to the purpose. And certainly the birds have responded well to the pains taken to give them comfort.

Last spring the boys had a fine hatch of chicks. They chose the eggs from the best layers and did not crowd their birds too hard while these eggs were being procured. That, to my mind, is one of the best ways of making sure of fertile eggs. Crowding is had from every point of view. The pullets hatched from those eggs began to lay in October. And they kept it up through the winter. Almost all the eggs we got while the price was the best came from those last spring's pullets.

Making Commission Men Honest

Formerly the boys had been selling their eggs to a local buyer. But they believed they could do better. So they got some crates and, when full, shipped them to a city dealer. The change was a good one. By selecting the eggs, packing only the largest and the finest, they realized from two to three cents more a dozen than we had been getting, while the culls sell at home for about the market price.

The one thing now is to find a strictly honest middleman. At first everything went all right. All was done on the square; but it is so easy to let down the standard! After a time the commission man began to report back that the crates were not full, that some of the eggs were too small and one thing and another, so that the check would come back short. Then, too, he have been careless about shipping back the cases. This is quite a loss, for the boys have to buy new ones every time the old ones are lost.

Just now New York State is considering a bill which provides that commission men shall be duly licensed to do business, a number of safeguards being put around these men to the end that they shall do their business fair and right. That would be a good thing, if men ever could be made honest by law.

For a while my boy had some misgivings about making such a specialty of poultry. He was a bit uncertain how the project would turn out as compared with the dairy work. We have a good-sized herd of dairy cattle, and he likes to push that part of the farm operations. But the other day he said, "The hens have done better than the cows the past year."

His Poultry Paid the Mortgage

Just now I have in mind another farm where the owner has sold off his cows and gone into poultry, with the result that he has paid off the mortgage on his place, fixed up his buildings and is prospering well. But it requires a peculiar ability to keep poultry successfully. I do not advise everybody to try it. Unless one likes poultry, he had better be pretty careful what he tries to do in this line with limited capital.

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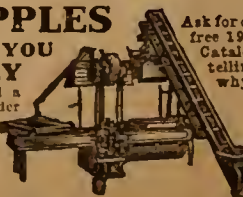
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What the Trap-Nest Tells Us

By B. F. W. Thorpe



ONE should attempt to increase egg production by trap-nesting without first selecting a good type of some variety of real merit. Then keep in mind the facts established by the experiments of Dr. Raymond Pearl described in *FARM AND FIRESIDE* last fall. Heavy production must be inherited in greatest degree from the male bird.

The male inherits from his mother his power to get heavy-laying daughters. This power of inheritance has long been known as the prepotent influence of the dairy sire to get heavy milk production in his daughters. It has now been proven that prepotency also holds true in poultry sires in regard to excessive egg production. Another fact to remember: unless the parent stock on both sides abounds in vigor, the labor and care in breeding will count for little.

How I Managed Without a Brooder

By Mrs. C. K. Turner

MY INCUBATOR hatched early in April. There was snow on the ground, and the weather was chilly and dismal. Having no brooder, the outlook for the clutch looked rather gloomy. It was a serious question how I was going to care for those little peepers, sixty-five in all, fluff-balls of variegated beauty, all brown Leg-horns, sturdy and strong.

I had hoped when I set the incubator, in fact I was quite sure, some hens were going to set right away. But they deceived me, and the weather, too, was disappointing. Instead of being warm and pleasant, it was just the reverse.

The Hens and Weather Both Disappointed Me

Fortunately, I had an old Rhode Island Red hen that had been on the nest for a couple of nights. The thought struck me that perhaps she would take chickens. The idea hardly seemed practicable, nevertheless I decided to try her, anyway. I cautiously slipped two or three in the nest, watching to see what kind of a reception they had.

I fully expected to see the little intruders viciously attacked, but, instead, she tucked them snugly away beneath her sheltering wings and clucked for more.

A Wash-Tub for a Nest

That gave me an idea. I procured a wash-tub, filled it half full of dry chaff, rounded out a nest for "Biddy" and placed her in it. There, by twos and threes and half dozens, I increased her family, until she was mothering the whole batch.

The tub was then carried out and placed in a tight, roomy brooder-house. For two or three days I kept the chicks confined to the tub. When feeding-time came, I gently lifted the foster-mother to the floor and placed a few chicks beside her. Then I scattered crumbs in the nest as well as on the floor, and also gave them water to drink, being careful that none was upset in the straw.

By the end of the first week the weather had warmed up, and I dispensed with the tub except at nights. A little later I discontinued its use altogether. In this way the Rhode Island Red hen and I, together, managed to raise about sixty of those chickens to maturity.

A prominent lecturer recently pointed to the fact that when we changed from the buggy to the automobile we retained the dashboard. What old and useless methods are we following on the farm?

Winter Coops of Building-Paper

By B. F. W. Thorpe

I HAVE a pen of six Single-Comb White Leghorns which began laying when a little over five months old and laid practically all



Queen of Sheba

winter. They were housed in a house sided with a single thickness of building-paper,

having no dead-air spaces; and a muslin-covered window admitted outside air for ventilation even when the mercury registered zero and below. The house was approximately air-tight on three sides.

The bird in the picture is Queen of Sheba, hen No. 4, and is typical of the entire pen.

Light Feeding, Small Production

By John L. Woodbury

IF YOU hear a breeder telling how little it costs him to keep his fowls, you may safely conclude that he is not getting many eggs. The hen is not a magician. She must have certain elements to make an egg, as the housewife must have the proper ingredients to make a pie. "I keep whole corn before my birds all the time," the would-be economist is often heard to say. "It is cheap, and they eat less than when fed at intervals."

Doubtless true, but it is the aim of the more astute breeder to see, not on how little and how cheap feed his birds can be kept, but rather how much they may be made to eat of the foods rich in the elements that enter into the composition of the egg.

One of the great secrets of heavy egg production is keeping the birds in good appetite so they will consume an abundance of food. This is done largely by variety and frequent change of ration. Especially in winter hens should be kept eating almost constantly through the hours of daylight, as the days are then short, and the demands of the system, which must first be satisfied, are much greater than in the warmer months.

A Prolific Golden-Laced Wyandotte

By Frank Driskell

CREDITABLE egg records are not confined entirely to flocks of the experiment stations. This Golden-Laced Wyandotte,



She laid ninety eggs in one hundred and four days

which is still less than a year old, laid ninety eggs in one hundred and four days. She is a product of the Lone Star State.

Facts Worth Knowing About Geese

By A. E. Vandervort

CONTRARY to common belief, geese mature just as rapidly away from streams or ponds as near them. A generous supply of fresh drinking-water is all that is required. There are many places on a farm worthless for cultivation that could be used with excellent results for geese-raising.

The cost of food for geese is proportionately small in comparison with other birds bred for market. A goose on range will eat grass, insects and other animal and vegetable matter found in the fields.

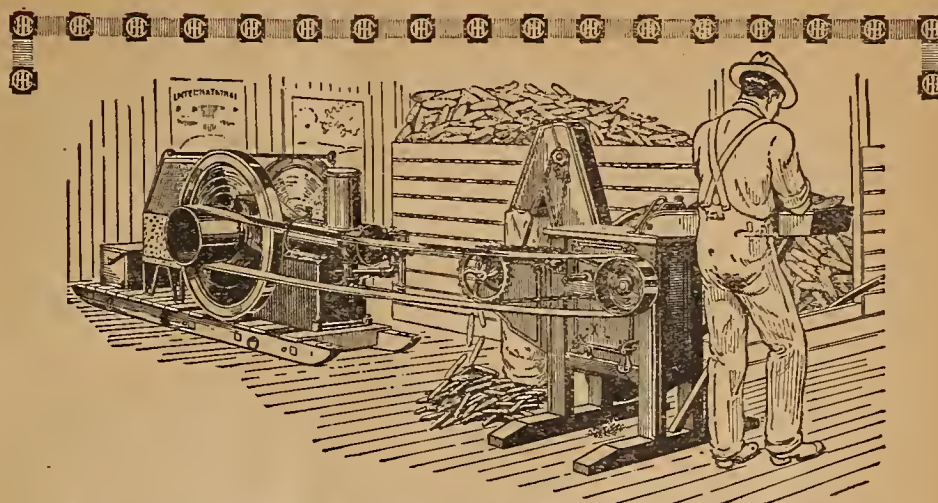
Eggs, Feathers and Flesh

Geese occupy the same place among poultry that sheep do among live stock, and if given proper care are as profitable in proportion. It is just as necessary to pluck the feathers from a goose as to shear the wool from the sheep, and the product has a great demand. The feathers may be picked four times during the summer, and each goose of the larger breeds will yield about two pounds of fine, soft, downy feathers.

For the best results I feed my geese an egg-producing food, consisting of four measures of wheat-bran, two measures of shorts, one measure of beef-scrap, one measure of oil-meal and one-half measure of sharp sand. I give them a small quantity of this food twice daily and allow them free range. I do not allow my geese to hatch their own eggs, because they are so clumsy that they break them, besides I wish to keep them laying all the time.

Though more geese were raised last year than ever before, yet the markets are not oversupplied, and the demand is growing all the time. Geese mature very rapidly and attain an enormous size.

The young are hardy and easy to raise. After they are five days old they should be left to find their own feed on the range and require no care except shelter during severe rain-storms and at night until feathered out. They live to be very old. Some breeders report them living and doing well at twenty years of age. Another important fact about them is that they are not susceptible to disease, this in contrast to most poultry.



Buy an Engine with Reserve Power

FARM power needs are seldom the same for any two days together. You never can tell when extra work is going to come up, or extra power will be needed. For this reason it is best to buy an engine a little larger than you ordinarily need. The engine with ten to twenty per cent of reserve power will often save enough to pay for itself just by its capacity for carrying you through emergencies.

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Live Stock and Dairy

Sweating Caused by Inadequate Ventilation

By Dr. A. S. Alexander

I AM asked to prescribe for a cow which is reported to have a good appetite and is apparently in good condition, but appears to sweat excessively when kept in the stable.

The air in the stable should be practically the same as that out-of-doors, and if one so ventilates the stable that this will be the case it is unlikely that the cow will sweat. Often the sweating is not real, but simply condensation of moisture upon the body of the animal.

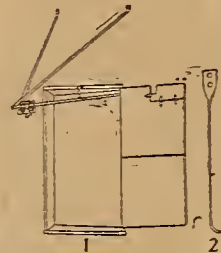
Home-Made Rat-Poison

By B. F. W. Thorpe

BARIUM CARBONATE is a poison which in small quantities is harmless to the larger domestic animals, but will kill rats and mice. Mix four parts of meal or flour and one part of barium carbonate, and place where the rats will find it, or mix ordinary oatmeal to a stiff dough in water, with about one-eighth its bulk of barium carbonate.

Let the Track Save Your Back

By E. A. Wendt



DOESN'T it make you tired to even think of pitching that manure two, three or four times to get it from the back stables to the door or wagon? And, besides, each time you clean the stables it takes two or three times as long as it

would if you only had to make one pitch to get it from the stall to the wagon; therefore, it costs two or three times as much as it should. Yet thousands of farmers are doing it in that way; many of them employing an extra man for that very reason.

If you are one of them, do you wish to continue wasting money, or labor—it's all the same—all the year round? Or, do you prefer this easy, economical, up-to-date method that you can easily install in half a day?

First obtain a pair of roller-bearing barn-door hangers—the hinge-joint style is best, and they cost about fifty cents per pair—and bolt them to a piece of two-by-four, as near together as possible (see 1).

Then get enough track to be about six feet longer than the entry, or walk, behind your horse or cow stalls, and hang it from the overhead supports and exactly over the center of this entry.

Hang it as high as possible and yet permit the rollers to pass easily under the top of the doorway at end of entry. It should be supported as illustrated.

The irons that support the track must be made to order, something of the shape of 2 (see sketch), but of a length to suit your stable. You can make the track and supports of good one-and-one-half-inch tire-iron.

Now make a car four or five feet long and narrow enough to pass easily between the harness-hooks and stall-posts and through the doorway.

The upper outer corner of the stable-door, from the center, must be cut out so as not to interfere with track; the piece should be hinged as illustrated.

Use a rope and double-block pulleys to hang the car from the carrier, and you can lower it to the floor, fill it with manure and pull it up by hand high enough to drop the load into the wagon or spreader that is backed up to the doorway under the projecting track.

Use one swivel pulley, and have the chain that lifts front end of car arranged so that you can easily unhook it to drop the load.

Such a rig is applicable to the feed-entries for carrying from the silo or for bringing feed from the granary.

A hay-fork track and rig could be utilized for this purpose, but it would not be as satisfactory, nor as cheap.

Meats and Eggs by Parcel Post

By John Smeltzer

THE parcel post as it stands to-day has been very helpful to me both in marketing produce and in ordering merchandise, but I realize that no great amount of produce can be shipped from my post-office in Hampshire County, West Virginia, to any large city in competition with their merchants under the present rates and restrictions.

This winter I realized the advantage of the parcel post and butchered a number of shoats that would have hams weighing from eight to ten pounds and have had no trouble selling them at prices which would net me from twenty-three to twenty-five cents per pound, or about eight cents above the local market price.

Shoat hams are bought mostly by city people having small families. My larger hams are sent by express and chiefly to customers having large families. In both cases they are people who are more anxious to get a superior article than to lower the high cost of living, and they know my hams.

Sometimes I put a small piece of breakfast bacon in the package as a sample, but so far I have received very few orders for it.

I have investigated shipping eggs by parcel post pretty thoroughly and find that eggs can be shipped to Washington or Baltimore, which are in the second zone, and if sold at the regular city prices for fresh eggs will allow me a profit of about one cent a dozen over what I get in the local market. To get this small margin of profit I would have to ship the eggs in five-dozen lots, as the larger the carton, the lower the price of same per dozen. The five-dozen size is about the largest carton that can be shipped by parcel post.

The few eggs I have shipped have been delivered in very good condition. There are a large number of cartons on the market with quite a wide range in prices for the same size. All of them which have been sent to me are very satisfactory. Our local merchants are not at all worried over the inauguration of parcel post.

High-Class Dairying

By Herbert Quick

BROWN BROTHERS, of Minnehaha County, South Dakota, whose contributions to our market page and other departments are always interesting and valuable, held a rather remarkable auction of dairy cows recently. The animals were Holsteins, practically pure-breds, but not eligible for registry. They had to go as grades, but were of exceptional merit as producers.

The average for fifty head, including twenty-five calves under six months old, was \$91 per head. One cow brought \$255—claimed to be the highest record price for a grade cow at public auction. One heifer calf brought \$50. A new herd of pure-breds has been placed on the farm, the choice cow of which has a butter record of 762 pounds in a year, while the best four have records averaging 660 pounds.

Raising an Orphan Colt

By Mrs. Theda Dee

SEVERAL years ago we had left on our hands an orphan colt. The mother of this colt had been in poor health and was very thin in flesh, consequently the colt was very poor and weak. At first it could not walk, nor even stand alone, and when helped up onto its feet would immediately tumble over. My husband, being a very busy man, concluded he did not have time to look after the colt, and said if I wanted to try and raise it I might have all I could get for it when it was a year old.

I Fed It Diluted Cow's Milk and Sugar

I began by getting a rubber nipple for a bottle, and gave it cow's milk, lukewarm, diluted with a little water, and also put in a little sugar. I had some trouble getting it to drink at first, as it was lying down most of the time, and I was almost afraid to stand it up for fear it would fall to pieces, it was so poor and shaky. I kept its stable warm and clean, with plenty of good, fresh bedding. I would open the stable door and let the sun shine in upon it whenever I could, but I kept it blanketed most of the time.

For the first three weeks I fed it every three hours, from early in the morning until late at night, and I would get up at midnight and go out and feed it and see if it was all right. It had to be fed often, as it took so little at a time.

By the time it was a week old it could stand alone and walk a few steps. When it was two weeks old, I began giving its meals farther apart, and I quit getting up in the night to feed it. It kept gaining, right along, and I began feeding it a little bran, cornmeal and oil-meal. It soon learned to lick it dry out of a bucket. It would also eat a little hay. I was particular to give it only nice fine hay. It also had fresh water all the time.

It is Now a Sturdy Colt

How that colt did grow! When it was a month old, it could run and play like any other colt, and was quite a pet. I then stopped feeding it on the bottle, and let it drink from the bucket.

That colt grew and got fat, and as it was of good stock it was an unusually nice colt by fall. I brushed and curried it every day, and all through the winter I gave it the best of care and turned it out for exercise every day.

When spring came, I concluded to keep the colt until fall, as it could run in the pasture and would cost but little and be no extra trouble.

After every dance someone has to pay the fiddler. There is a wide difference in dances and the steps you take. Cultivate the kind that stands for manliness, uprightness, temperance and honesty, and the fiddler's bill won't come to you.

Better Methods of Hog Castration

By R. V. Brown

CASTRATION may be safely performed at any age, but the best results are obtained if done when the pig is about twelve or fourteen days old.

Select a good clear day, clean up the yard, put in fresh bedding, and have a clean pasture for the pigs when you are through with them. Now you can confine your pigs.

Use a Good Disinfectant

Your knife should be sharp and thoroughly disinfected in a three per cent. zenoleum solution, which should be used to wash off the place of operation before and after cutting. Zenoleum can be secured at any drug-store. It is well to have on hand a piece of catgut or some silk thread for treating ruptured cases.

When all is in readiness, have someone pick up one of the little pigs and hold it in any convenient way. The operator washes the rear of the pig with the solution, holds the testicles with his left hand and cuts with his right. Cut low down, making a fairly long opening and fairly far from the crease. This will insure good free leakage. Pull the cord out well before severing it. If the pig is ruptured, cut the skin open, remove the testicle, and tie securely behind it with the silk or catgut. Then open the covering of the testicle proper before severing. Wash again with the zenoleum, and turn the pig into the clean pasture. Wash your knife and proceed as before.

Too often do we find farmers doing this task as late as August or September when the pigs are nearly half grown. Forget the selecting of a muddy day and the "dark of the moon."

Do the work early, and do it carefully and in a sanitary way. The young pig makes little or no fuss and loses little blood. A large pig receives a check by worry and excessive loss of blood.

also that the addition of corn to a sweet-clover ration increases the digestibility of the sweet clover.

It is in the rôle of a soil-improver that sweet clover is perhaps best known, and in several districts it is being seeded with this object in view. The roots not only add nitrogen to the soil by means of their association with the nitrogen-gathering bacteria, but owing to their fleshy character, coupled with their decay every two years, there is left in the soil large quantities of humus which loosens up heavy clay soils and improves their texture as well as that of sandy soils.

The sweet clover itself will grow on land almost devoid of humus so that it is available on the poor, washed hillside soils as a pioneer crop. In Alabama corn following sweet clover gave an increase of six bushels per acre on poor soil; in Ohio, eight bushels per acre, and in Germany sweet clover preceding oats increased the yield seventeen bushels per acre. It is very tolerant of alkali, and a great deal of such soil in the West can be made productive by seeding it to sweet clover.

On account of its biennial character, it lends itself readily to rotations. In the semi-arid sections its good effect on the following crop is spoiled by its heavy draft on the soil moisture.

Sweet Clover is Easily Eradicated

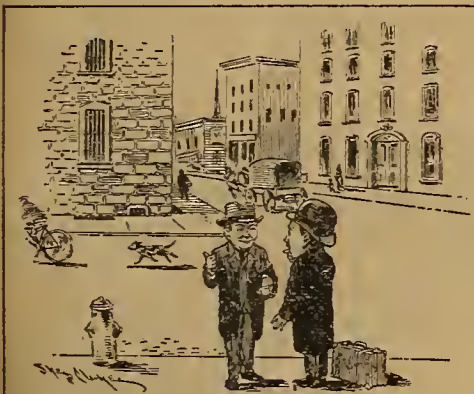
No trouble is experienced in destroying a stand of the clover. Continued mowing will prevent it from seeding and thus rid the field of it at the end of the second year, except for a few plants which arise from the hard seed which has not germinated with the rest.

A cultivated crop like corn following the sweet clover will catch all the stray plants arising from such seed and leave the field clean. No fear in regard to getting rid of it need be entertained, except in irrigated communities where the seed is scattered by the irrigation water from plants growing along the banks that are not reached by the mower or cultivator.

Seed Production Profitable

Very little attention is at present paid to the seed-production feature of sweet clover. Although it seeds abundantly, much of the seed produced is lost, owing to unevenness in maturity. A single panicle sometimes carries blossom and mature seed at the same time. Most of the domestic seed has been gathered by hand and flailed out. This is especially true in the South. It can also be harvested with a grain-binder and thrashed in a common thrashing-machine, the seed being run through a huller later to remove the hulls. The present price of seed makes this feature of sweet-clover production very profitable. The yields of seed vary from three to twenty bushels per acre, and the retail price ranges from twelve to twenty cents per pound for clean hulled seed. The grower usually receives one half to three fourths the retail price when selling to seedsmen. Some growers market their seed crop locally and thus get the full price. Seed in the hull brings much less.

At the present time there are very few serious enemies of sweet clover, so that its production is a comparatively safe proposition in most localities.



Satisfied with Results

TRAVELING MAN—"Don't talk local opinion to me. This town is going to the dogs since that law was passed here. A year ago that fine building over there was occupied; now it stands there empty."

CITIZEN—"Yes, but just look at that large building across the street (pointing to the jail). A year ago that also was occupied; now it stands there empty."

Selling Butter by Parcel Post

By Mrs. G. E. Edmunds

MY FRIENDS in New Jersey, twenty miles from New York City, were paying forty-two cents per pound for ordinary grade butter. I sent four pounds of butter from my post-office (Clarkson, Monroe County, New York) on Tuesday afternoon, and it reached my friends early Thursday morning in prime condition.

My grocer pays me twenty-eight cents a pound. I charged them thirty-two cents, and they paid the parcel postage which was twenty-seven cents for the four pounds.

I packed the butter in a new five-cent light-weight bread-tin lined throughout with oiled paper. We both call it a good bargain. I make four cents a pound on my butter, and they get better butter for thirty-nine cents a pound. The square bread-tin makes a very convenient receptacle.

No one ever expects to see a silo on a shiftless-looking farm.

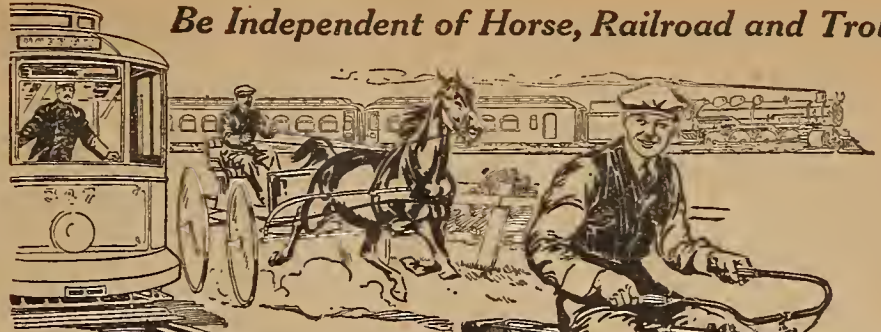
Learn to do neat carpentry around the farm, and be independent of dilatory carpenters who work slowly.

Sweet Clover

[CONTINUED FROM PAGE 5]

Feeding experiments with sweet clover are few so that definite data on which to base positive statements are scarce.

There have been, however, some lamb-feeding experiments at the Wyoming Experiment Station in which the results from sweet clover were almost equal to those obtained from alfalfa and much better than those from prairie-hay. Hogs pastured on sweet clover at the Iowa Experiment Station made almost as much daily gain as those pastured on red clover, and the sweet clover carried a greater number per acre. Other experiments at the Iowa Station have shown



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What Amateur Horse-Breeders Should Know

By John P. Ross

THE professional horse-breeder has in his mind a clearly defined type of what he desires to raise, and owns or procures stallions and mares possessing as nearly as possible all the good points and none of the bad ones of that type. His success depends on his judgment in mating them so as to secure in their offspring as many of the good points and as few of the bad ones as possible.

But the farmer who wisely proposes to keep a team or two of mares to do his farm work and, as a side issue, to breed from them some draft-colts is differently situated. Having decided on the breed he prefers whether Percheron, Shire, Clydesdale or Belgian, his best plan at starting is to seek



The Percheron stallion, Leon

out the best thoroughbred stallion of the desired breed to which he can have access in his neighborhood, and to study his good and bad points.

The stallion should be true to the best types of his breed and should possess the size, weight, soundness and good looks which the breeder wishes the colts to inherit. Above all things, the stallion should be of sound and robust constitution and good disposition. As the tree is to be judged by its fruit, the pudding by its eating, so the stallion should establish his powers of prepotency by the marked manner in which his good or evil qualities are stamped upon his offspring.

Leon, the Percheron stallion of the above picture, has made for himself a high reputation as a sire. He is now fifteen years old, weighs 2,000 pounds and is still a great success in his business. The fact that the picture was taken in his ordinary working dress, instead of as he would appear when fattened and fixed for show, adds, I think, to its value.

The other picture accurately represents the Shire horse, Marsh Topsman. He weighed, when imported, 1,970 pounds as a three-year-old; is a perfect specimen of his breed, showing many traces of the old Clydesdale blood, from which all Shires are descended, and has earned a high reputation.

Both of these horses are owned by Mr. O. J. Bailey, formerly president of one of the leading banks of Peoria, Illinois, who has done much to improve the horses of that part of the State by putting horses of the heavy draft, standard trotting and Morgan roadsters at the service of the farmers.

The share which each of the parents takes in the formation and general character of their mutual offspring is, and always has been, a favorite subject of debate among horse-breeders, but the generally accepted belief is that the mare is responsible for the formation of the body and the internal organs, and the stallion for the quality of the bones, the limbs, the height, the temper and disposition.

Find the Model Sire First

I am aware that this method of first selecting the sire is not the one usually followed, but the qualities which he desires to perpetuate are more likely to be developed in a thoroughbred stallion than in any mare he is likely to own. He can thus get fixed in his mind a clear idea of the type he aims to perpetuate.

I once asked a very successful horse-breeder why he kept an old Shire stallion long past all power of service. His answer was, "I keep the old chap as a model to remind me of what the shape and make of a draft-horse ought to be."

If, then, our breeder has found his model sire, and is fortunate enough to own even one mare possessing qualities in line with his, he can make his first start in the business; but if the mares he has are not of that type, or if his means will not enable him to buy thoroughbred mares of the breed of the horse, he should hunt around for grade mares of the breed and if possible, by trading or otherwise, secure them and dispose of those he has.

To start breeding from unfit mares is merely to court disaster.

Poor condition or a slight blemish here and there need not be considered, so long as there is absolute soundness of wind and limb. If, however, after making a study of the subject from live examples, he finds it unsafe still to trust to his own judgment, especially on this very complicated subject



Marsh Topsman, an excellent Shire

of soundness, he had better not buy without first obtaining the opinion of a trustworthy veterinary surgeon, for to breed from unsound parents on either side is to perpetuate a source of constant loss and annoyance.

To Cure a Horse of Kicking

By J. A. Raiser

TO HAVE a kicking horse in your stable is not only distressing, but extremely dangerous. We cured a horse of that habit in the following manner: This horse had several times kicked through the siding of the barn and later kicked inch-thick oak boards, nailed up to protect the barn siding, into smithereens.

We filled a stout gundy sack with sand and suspended it from the ceiling with a rope directly in the rear of the kicking horse in such a position that its heels could have a good play upon it. This mammoth pendulum, needing but a forceful touch, would swing with clock-work precision as soon as the horse began to play its gymnastic stunts upon it. At the first kick the bag would swing away only to return with great momentum, giving the horse as good as it sent. Of course this unexpected state of affairs resulted in a general mixup between the horse and the bag of sand for a few minutes, but the bag held its own, returning all it received with interest, till the horse, coming to the full realization that there was no use to combat, was perfectly cowed.

The bag was allowed to hang for about a week to insure an absolute cure, and up to the present time there has been no need of repeating the process.

Some horsemen suspend small logs to answer this purpose, but as there is too much danger of the horse becoming injured in coming in contact with it I would not recommend the log. The bag containing sand should be of strong material, especially if the horse is shod.

Don't make a single pound of short-weight butter. To be sure every pound is full weight, weigh it.

Don't forget to stir the cream thoroughly after putting in each separation, as this will insure uniformity in the flavor of butter or cream if the latter is sold.

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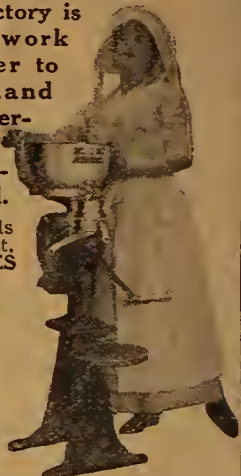
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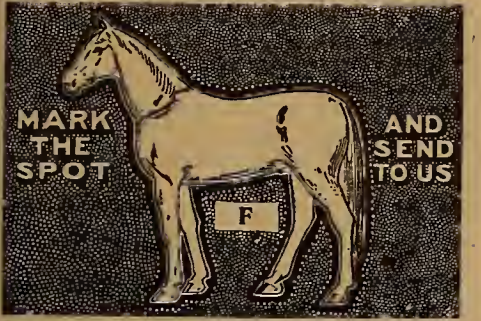
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Your druggist will obtain Mack's \$1,000 Spavin Remedy for you if you ask him. If for any reason you can't get it, write us. We will see that you are supplied. Ask for instructive free book "Horse Sense" No. 3.

McKallor Drug Co., Binghamton, N. Y.

The Market Outlook

Spring Condition of Sheep and Markets

By John P. Ross

DESPITE the falling off in the number of sheep in the country and the increasing demand for mutton which may be said to have sprung up suddenly, no scarcity has been felt in any of the great markets, and prices of all classes of sheep and lambs have been higher than could reasonably have been looked for.

By the middle of March nice light-weight lambs were selling from \$9 to \$9.25, the "fair to good" kind from \$8 to \$8.75 and yearlings between \$7.25 and \$8.40. The Easter demand caused quite a rush on the part of buyers for light weights, as in many markets a close distinction is not made between real spring lambs and those which date back to a more remote period, even though they are small. As in many other trades, very high prices are sometimes found to interfere with a strict brand of morals, and the "just as good" argument prevails.

Feeders are Still in Demand

As regards older sheep, a quite unusual demand for them has existed for some weeks, fat wethers ranging between \$6 and \$7. Ewes, which have been scarce, have gone nearly as high. There has been a good demand for shearing lambs and feeders. The largest shipments of lambs have been from Colorado and some of the western States, and they have generally been of good quality and finish.

Not much movement is visible in wool, but growers seem to have great faith in the immediate future of the market and are disposed to hold on to their clips and to await developments. There seems to be little doubt as to the very healthy condition of the woolen trade all over the world. Fine wools are sought for mostly just now.

The ewes and lambs, at least those belonging to readers of FARM AND FIRESIDE who have followed its advice as to their care during the winter, have been bountifully fed on a well-considered ration of some sort of grain—oats, I hope—tempered by a proper amount of bran and oil-meal, with roots, sweet hay, silage, alfalfa, and the like. If this has been their happy lot and they have been kept comfortably warm and dry, and the lambs have by now learned to enjoy their share of those good things, they are bound to prove a pleasing sight for the shepherd as they begin to crowd about the yard gates longing to get at the spring grass.

Do Not Stop the Grain Ration Yet

What a pity then it will be if, after they have been out in the pasture for a week or two, they should begin to show signs of a falling off in flesh and friskiness, which will certainly be the case if their grain ration has been stopped or greatly diminished.

They still depend to a great extent on the milk supply of the ewes. And the young lush grasses, be they ever so plentiful and though they may swell the maternal udder, will not keep the feeding qualities of the milk up to the high standard it has attained.

This great and sudden change, too, in their feed will be very apt to induce scouring. In the ewes, if only slight, it will do no harm, but in the lambs it must be promptly stopped, or it will cause a check which of all things short of death is the worst that can happen to young animals. They can get in a few days of unchecked scouring into a condition which may retard their growth for months.

To Prevent Ragged Fleeces

No false idea of economy should deprive them of a daily ration of grain, though it may be reduced to one half. A sprinkling of oil-meal with it will not be wasted; and though they will require less water what they have must be pure. In heavy rains drive them to shelter.

As the ewes' fleeces should by now be heavy and clean, it will be well to keep them out of pastures in which bushes, cockle-burs or thistles are plentiful, or they will soon get ragged. This is mentioned with some hesitation because readers of FARM AND FIRESIDE do not allow such things on the farm.

The Summer Outlook for Egg Prices

Packing Stock Prices for 1913 May be Lower Than 1912

By O. F. Sampson

THE first part of April is the time that packers and speculators begin to get busy buying eggs for the future winter storage use. Last season was acknowledged to have been one of the worst in years for the speculators, and there is a tendency to go slow this season.

Last year at this time eggs were going into the storage warehouses at an average of about nineteen cents per dozen. To date this year little stock has gone into storage.



Nine out of Every Ten Fires Start on the Roof

A brand from a burning building, sparks from the chimney or lightning quickly set a wooden roof afire.

Kanneberg Steel Shingles

"We Pay the Freight"

A building roofed with Kanneberg Shingles is protected from such danger. They are fire-proof, weather-proof, lightning-proof, heat and cold-proof. Can be laid more quickly than wood shingles and last longer, look better all the time and require no repairs. They do not curl, rot, crack nor fall off like wood or slate. Many Kanneberg roofs are still in use after 15 or 20 years' service.

Our patent lock joint is absolutely water-tight and allows for expansion. Nail heads are protected from weather.

Kanneberg Shingles prove the most economical roofing for all buildings because of their long life and freedom from maintenance charges.

Kanneberg Steel Shingles are 28 gauge steel, painted or galvanized, and come singly, eight on a sheet, or in clusters on one sheet 5 ft. by 2 ft. We send special nails, free. Every shingle is backed by a money-back guaranty to be up to sample.

Send for Catalog showing sizes and designs of shingles and our corrugated roofing and siding. Get our rock-bottom prices before you buy. Ask for sample shingles. We sell direct to you, saving you middleman's profit. We pay the freight, and ship orders day received.

KANNEBERG ROOFING & CEILING CO.

31 Douglas Street Canton, Ohio

Kanneberg
Roofing &
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31 Douglas Street
Canton, Ohio

Send catalog and
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Address.....

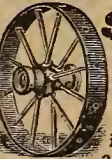
\$15.95 AND UPWARD SENT ON TRIAL AMERICAN SEPARATOR

Thousands In Use giving splendid satisfaction justifies your investigating our wonderful offer to furnish a brand new, well made, easy running, easily cleaned, perfect skimming separator for only \$15.95. Skims one quart of milk a minute, warm or cold. Makes thick or thin cream. Different from this picture, which illustrates our low priced large capacity machines. The bowl is a sanitary marvel and embodies all our latest improvements.

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Our wonderfully low prices and high quality on all sizes and generous terms of trial will astonish you. Whether your dairy is large or small, or if you have an old separator of any make you wish to exchange, do not fail to get our great offer. Our richly illustrated catalog, sent free of charge on request, is the most complete, elaborate and expensive book on Cream Separators issued by any concern in the world. Western orders filled from Western points. Write today for our catalog and see for yourself what a big money saving proposition we will make you. Address.....

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with 60-inch feed hole can bale 2½ tons an hour or it is yours free.

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HORSE nails bearing that trade mark can be depended on. It distinguishes the world's best horse nail from others.

The check mark protects you, for the Courts have forbidden other nail makers using this mark, or imitating it.

So, when "checked head" nails are driven into your horses' hoofs you get the famous "Capewell"—the safest, best holding, easiest driving nail made.

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Not the cheapest nail regardless of quality, but sold at fair price so that any shoer can afford to use it.

"Reason Why" Booklet Free, Dept. "A"

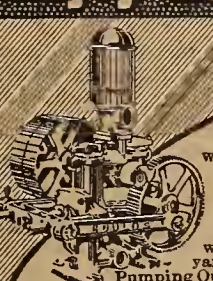
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Largest manufacturers of Horse Nails in the World



Enjoy the Luxury of Running Water



Running water is a low priced luxury that can be had in every farm home. In the kitchen, bathroom, barn, cow stable—in fact, everywhere you want it, when you want it, you can have fresh, clean, running water. Thousands of farmers and their families are enjoying the luxury and fire protection of running water with one of the three hundred different types of

GOULDS RELIABLE PUMPS

Running water in the bathroom is a big convenience—it saves carrying water upstairs; in the kitchen it saves women miles of steps and lots of work; in the barn it saves time and labor in watering horses; in the barnyard it means healthier stock, waters cattle, washes wagons, etc. A Goulds Pumping Outfit for hand or power costs little to install and almost nothing to run.

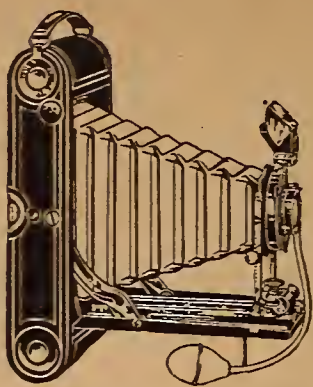
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Our big illustrated book, "Water Supply for the Country Home," tells how you can have running water on your place at low cost. It solves every water problem. A mine of interesting information. Send a postal for it today.

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"Largest Manufacturers of Pumps for Every Service"



KODAK on the Farm

There's a practical, common sense use for the Kodak on every well regulated farm. It's rapidly becoming a necessity to the business farmer. Pictures of stock and poultry to be sent to prospective customers, pictures of crops at certain stages of their growth as a matter of valuable record, pictures of fat or lean cattle and hogs and horses as a record of certain methods of feeding, pictures of buildings that are to be re-modeled, pictures of desirable features in other peoples buildings—you can use all these to advantage in *your* business.

And you can make good pictures with a Kodak, or with a Brownie and can successfully do the developing and printing. No dark-room, no fragile glass plates. Nothing complicated.

Ask your dealer to show you the goods and give you a catalogue, or write us and we will mail catalogue without charge and give you the address of your nearest Kodak dealer.

EASTMAN KODAK CO.,
382 State St., ROCHESTER, N. Y.

The price to be paid for storage eggs has been an unsettled question. Receipts are now coming well above the amounts for immediate use, and something will have to be done with the surplus, but so far as I have noted egg-buyers hardly care to offer above eighteen cents. For this reason I look for a drop in fresh goods soon, though select hennerly eggs are well above twenty cents.

Reports from the South and West give the supply well above last year at this time, and quite a goodly amount of this stock is coming east. This helps to swell the receipts in the eastern markets. If this supply keeps up, there can be but one conclusion. Prices will fall. Some are looking for the lowest price for years this spring, and a few are now saying we will have twelve-cent eggs this year from the producer. I am not so sure as some in this view, but we will not expect the price to keep as high as last year. The Middle West is giving us plenty of stock now, and the outlook and reports from there show that we will have larger shipments than usual from there this year.

The egg operators held their annual meeting in St. Louis last week. Nearly every western State sent delegates, and some eastern States were represented. In an address by Paul Mandeville of Chicago he noted that there has been a big increase in the consumption of eggs east of Chicago the past year. Mr. Mandeville placed the number of cases in storage in the United States last season at 10,000,000 to 13,000,000 cases.

All in all, I am of the opinion we will see eggs somewhat irregular for the month of April, but I see no reason for twelve-cent eggs.

No Horses to Feed in Town

By Clarence A. Purchase

THE complete output of a farm of 187 acres is carried by this truck to market, a distance of twenty-three miles, which is easily covered in two and one-half hours. As by horse from seven to eight hours are required, the saving in expense is obvious.

Before the truck was used two loads left each day during the marketing season. Both loads required an extra tow-team. The following day another crew alternated. By

this system twelve horses and six men were continually in service. Here another item should be considered, that of boarding and lodging men and horses while at market. On the other hand, the truck requires but



This truck markets all the produce of a 187-acre farm

one operator, who makes the trip daily, going and returning so rapidly that there is plenty of time to rest for the return evening trip.

Buy Home-Grown Seed-Corn

By Geo. W. Brown

PRETTY soon we will be getting out our seed-corn testing-boxes again, to know how much life our seed-corn contains.

It is not enough to test a portion of the ears. Every ear to be planted should be tested, and it is not enough to have our test grade seventy or eighty per cent.; we must get it up as close as possible to one hundred. Even then our chances are bad enough when we consider the weather, crows, cutworms and wireworms to be encountered after planting.

The variety must be adapted to our zone. The best seed-corn we ever had was bought from a near-by German neighbor, and the poorest corn we ever grew was raised from seed shipped to us from a prominent seed firm. It was thoroughly reliable and good seed, but our climate did not fit it. We tried for three years to acclimate it on a small scale, but gave it up.

If you have to buy seed, buy it from your neighbor, or at least from someone in your county, but best of all raise and select it yourself and you'll be sure it will grow.

Jewish Holidays and Poultry Products

By O. F. Sampson

TWO of the most important points in marketing sometimes overlooked are the choice of the market and the time of marketing. If we send our product to the market at a wrong time, or to the wrong place, we will suffer by receiving less for the goods. Those who receive most for their goods keep close watch on the conditions of the markets.

It is not generally understood that the Jewish holidays play an important part in the prices for poultry and eggs on the New York markets. For this reason I am giving below the dates of these holidays this year and the best days to get the goods to the market for good prices. If you desire further information along this line, you can get it by writing to your commission house.

Dates of Jewish Holidays, 1913

PASSOVER: April 22d, 23d; best market days, April 16th to 19th; kinds most in demand, turkeys, heavy fowl, fat ducks and geese.

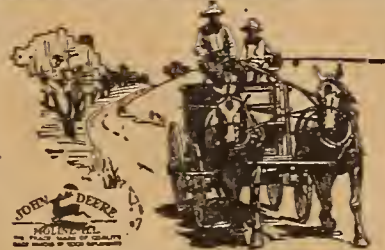
LAST PASSOVER: April 28th, 29th; best market days, April 23d to 26th; kinds most in demand, fine poultry of all kinds.

FEAST OF THE WEEKS: June 11th to 12th; kinds most in demand, good fowls of any kind; best market days, June 5th to 9th.

Getting the goods to the market in good condition goes a long way toward the best prices for them. Another thing is noteworthy in this connection. Eastern markets are usually higher in all poultry produce than western or southern markets, and when there is difference enough to warrant the dealers in other sections ship large quantities of poultry and eggs to the New York, Philadelphia, Boston and other eastern markets.

This fact came into prominence the past winter, when New England eggs for market showed a big falling off in shipments from last year, yet the total receipts of eggs in the New York market were more than a year ago. The goods, whether western or eastern, that reach the market in best condition and at the best time give the best returns to the grower or shipper.

JOHN DEERE IMPLEMENTS



John Deere Wagons

No other implement on the farm is used as much as the wagon. Nothing is more abused. Consequently the wagon should have the quality to withstand this usage.

John Deere Wagons are built of oak and hickory—the best material known for wagon making. They stand up under the most severe tests, and give the satisfaction you want.

John Deere Ironclad Wagons

A booklet that gives you valuable pointers on how to buy a wagon, and other interesting articles that you should know about. See lower right hand corner of ad. and see how "to get the books you want."

Dain Hay Tools



Use Dain Hay Tools and put up your hay quicker, better and more economically than with any other hay tools.

The Dain Hay Loader is easy to operate. Simple construction, few parts, nothing to get out of order. Material and workmanship of the known Dain standard, proven by service to be reliable and trustworthy. Ask your John Deere Dealer about the Dain line.

Dain Hay Loader and Side Delivery Rake

tell you about how to use these tools to handle your hay rapidly and economically. Should you want information about other Dain hay tools, tell us which tool you are interested in. See lower right hand corner of ad. how "to get the books you want."

John Deere Disc Harrows and Corn Planters

This spring pressure harrow pulverizes your soil thoroughly and puts it in condition to grow the biggest crop you ever raised. The extraordinary flexibility of John Deere Disc Harrows due to spring pressure, insures thorough cultivation of your entire field. It leaves small middles and cuts out dead furrows.

John Deere Corn Planters

The great accuracy of drop is what naturally interests you most. John Deere Planters give the highest accuracy of drop, attainable. Repeated tests show ten to fifteen bushel per acre in favor of accurate planting. You profit by the increased yield due to perfect stand, by additional years of service, and freedom from break down.

Bigger Crops from Better Seed Beds and More and Better Corn

Two books that will prove a great help to you in the preparation of your land for seed, and the planting of corn.

These books contain valuable suggestions by men who are experienced on those subjects. "To get the books you want," see lower right hand corner of ad.

Davenport Roller Bearing Steel Wagons

Reduces the draft; makes your hauling easy; the roller bearings do that. Haul larger loads, make fewer trips,



save time. Your time is worth money to you.

You do the same work with one horse less; if you now use three horses you will only need two; if you use four, three will do the work.

No repair bills to pay; no tires to reset; the Davenport Roller Bearing Steel Wagon is practically everlasting. The first cost is the only cost.

The steel spokes don't pick up and carry the mud like wooden spokes; they cut through it.

Ask to see the Davenport wagon at your John Deere Dealer's.

When The Going is Hard

Containing twenty-six articles on wagons. Tells you why the dish is put into the wooden wheels and other things you should know about. It is interesting and you'll like it. Lower right hand corner of ad. tells how "to get the books you want."

Better Farm Implements and How to Use Them illustrates and describes the most complete line of farm implements made. Tells when and how to use them under varying conditions—answers questions about farm machinery and is a practical encyclopedia for the farm. It is worth dollars to you. You can't afford to be without it. Write today for "Better Farm Implements and How to Use Them."

John Deere Plow Company, Moline, Ill.

Branches and Dealers Everywhere

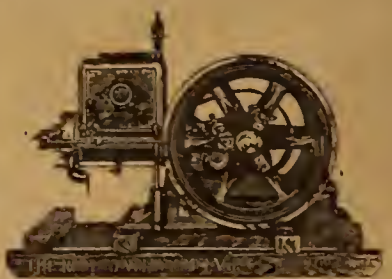
R & V "Triumph" Gasolene Engines

Popular Farm Power

Develop even more than rated horsepower. Easily started, smooth-running, dependable. Economical in use of fuel. Speed easily increased or decreased. Best type of magneto on the market. Portable and stationary engines.



R & V "Triumph" Engines can be furnished in sizes 1 to 12-hp., with the hopper-cooling system. This cooling system does away with tank, pump, piping and fittings, making a neat, compact engine noted for its good working qualities. No air-cooled engine troubles to contend with.



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Tells you how to lessen your work every day of the week, and every season of the year. Get this book and see how your work can be made easier, at the same time saving you money. Lower right hand corner of ad. tells you how "to get the books you want."

"To Get the Books You Want"

Write to us at once stating which books you want, and they will be mailed free. To be sure that you get a copy of "Better Farm Implements and How to Use Them," ask us for Package No. X 71.



The FARMERS' LOBBY.

Mr. Wilson and Mr. Bryan

By Judson C. Welliver



NE can see the signs of it all around Washington nowadays. There are evidences of the formation of lobbies. Press agencies are beginning to bloom into existence. Organizations that one never before heard of are stepping to the front to announce in a few modest, well-chosen words, delivered in strident tones of blatant assurance, that they're on the job, looking for the chance, if need be, to die for the cause.

The cause, of course, is the great American agricultural interest. The farmer is once more threatened. He must be looked after. As he doesn't know enough to look after himself, these thoughtful gentry will do it for him. Under no circumstances will his sacrifice be permitted; not while there's plenty of money in the till with which to fight his sham battle.

For, you see, we're confronting another revision of the tariff, and the time has come to line the farmer up against making it a real revision. If the farmer will just stick—and consent to be stuck—there'll still be a chance to fend off any worth-while measure of reduction in the schedules.

Uncle Trusty and the Manikin

THEY are fixing up the scarecrow farmer right now, stuffing it with straw. Before long the effigy will be pushed out to the center of the congressional stage, and the curtain will go up on the scene that will show the farmer pleading for his life. He will be begging not to have the protection taken off his wheat, oats, cotton, corn and all the rest of the things he raises. He will shed a bunch of well-organized tears, provided the plumbing inside the scarecrow doesn't get out of whack, about the loss of his home market.

If I were an artist, I'd produce a cartoon of this performance. I would have our friend Uncle Trusty sitting in the middle of the stage, as a ventriloquist, with a wooden manikin on his knee labeled "The Farmer." The conversation would run somewhat thus:

Uncle Trusty—"Now, my handy little friend, what are your views on this matter of tariff revision?"

The Manikin (vigorously working his jaws as Uncle Trusty pulls the string)—"Aw, Uncle, you say it for me. I don't remember what you told me to say."

Uncle Trusty (startled at his thoughtless slip)—"No, that isn't what you were to think. Now, try again."

The Manikin—"All right, Uncle. What you told me to say was that if they take away my protection, the peasants of Tibet, the Sahara, Kamchatka and Madagascar will rush in their pauper-raised farm things, wrest my market from me and ruin my power to buy your products."

Uncle Trusty—"Fine. What next?"

The Manikin—"And when you won't buy from me, and I can't buy from you, we'll both go down the tobog to ruin in a handbasket. We mustn't let any of the schedules be interfered with."

Whereupon there should be sheet-iron thunder, deafening applause from the claque of Uncle Trusty's pals, and phonographic shouts of approval from the straw-stuffed farmers on the front benches.

Remember the Meat Inspection Scare?

IT'S a good old game, but chances are against its success this time. There has been so much crying of wolf about the farmer, and the wolf hasn't bitten anybody very hard yet, that one inclines to doubt whether there is any wolf.

Recollect when, six years or less, ago, the meat-inspection legislation came up in Congress? There was a wild alarm about how it was going to ruin the American meat business, destroy the foreign market, put the farmer out of business and scatter trouble all over this continent. Well, a casual study of the comparative prices of live stock and meat at that time and now will convince you that at least the farmer wasn't the man who suffered.

He is getting something like thirty per cent. more. I am informed, on an average, for what he raises, than

he did when the inspection legislation passed. It was all fake, plain bunk; the farmer was made to play the part of Uncle Trusty's little wooden-headed friend on that occasion, as he always is asked to do when Uncle's tariff schedules are in the way of being muddled up.

The Gold Going Abroad Represents Our Last Year's Crops

EVER stop to think what he has done for the world in the last few months? He began by raising record-breaking crops last year. That was because he was lucky; the sunshine and rain got well distributed. Then just about the time that huge crop was ready to be eaten and worn the Balkan war broke out. A war means just so much waste; so many men killing each other instead of raising crops and making goods; burning powder and wearing out clothes and cannon that must be paid for; making widows and orphans that must be supported; in short, less production and more consumption.

So when this Balkan war turned loose, there was big demand for the surplus of American farm products. We sold them to Europe, and Europe sent us money or credited us with it on the books. Now Europe, in addition to having the waste of the Balkan war on its hands, confronts the necessity of paying for the increasing armies and navies that a lot of frightened nations are investing their money in. So they are drawing on us for the use of some of our big stock of gold; and that explains the shipments of gold abroad. That gold is nothing on earth but the gilded and coined surplus of the American farms last year; and right to-day it is keeping the world off the rocks of financial disaster. Take off your hats to yourselves, you farmers, pat yourselves on the backs, and don't start ghost dancing.

Bryan Doesn't Want to Smash Things

THE new administration is with us, the President and cabinet are settled down to business, and with nearly everybody accepting that the tariff is sure to be substantially reorganized there is already speculation as to the next step after that. Apparently it will be currency and banking legislation, especially currency, which the country needs. Everybody expects this subject to command much attention at the long session of Congress beginning next December; probably there will be legislation, and if there is it will be based on the general scheme outlined in the Aldrich measure. They are not going to get very far away from that bill.

In connection with all the discussion of prospective legislation, policies and programs there still crops out a deal of inquiry as to how President Wilson and Mr. Bryan are going to make out together. My guess is that they will make it very satisfactorily. Mr. Bryan didn't go into the Wilson cabinet in order to have a good chance to smash things. He doesn't want 'em smashed. He wants this Wilson administration to be a success. He's a good deal more responsible for it than anybody else; if it fails, the American people will be convinced at last, once for all, that they guessed right the three times when they rejected Mr. Bryan's advice, and made their sole mistake when they accepted it. That would finish Mr. Bryan, and Mr. Bryan knows it. Whatever chance he has to be president in 1916 or 1920, depends absolutely on the success of the Democratic party in the next four years. If Wilson fails, it'll be like the core of the small boy's apple: there won't be any 1916 or 1920 for the Democratic party. Mr. Bryan knows all that, and is determined to do all that lies in his power to save 1916 and 1920. President Wilson understands it, too. The last thing that will happen will be a vital disagreement between these two men. They are going to hang together because it's preferable to hanging separately.

There's more danger of the rank and file of Democrats doing damage than that the party leadership will

do it. I mean, rather, the rank and file of the minor politicians who want the jobs. Patronage is going to be a big and vexing problem for a long time to come. It always will, until the country gets sane enough to take patronage out of politics. Of course, there are a comparatively small number of the higher positions which have to do with execution of administration policies that ought to be, and always will be filled by men designated by the President.

But the vast body of government workers ought to be selected for their qualifications to do the work, not because of their politics. Take the postal service, and compare it, say, to the Standard Oil Company. In the Standard Oil a good man who proves himself in a minor capacity gets promoted to a better place. If he makes good as agent in a small place, he is sent to a big place, perhaps at the other end of the country. If he makes good there, he becomes a minor executive in charge of a territory or a department of the business.

If the postal service were placed on a corresponding basis, it would work like this: A clerk in a post-office at Squash Center would be promoted to be postmaster when a vacancy occurred. If he proved a good postmaster, he might be called away to the county-seat, as assistant postmaster; thence would rise to postmaster.

The Spoils System is Still with Us

LATER he would have charge of a big territory's mail service; and, if the excellence of his service warranted it, earned it, he might rise to the top of the whole system as director of posts. His career would be in his own hands. Instead of becoming postmaster at his home village because he was a successful ward boss, serving in that place till the administration changed, and then being fired without reference to his qualifications, he would find the government service a profession, with a future.

That scheme, applied to the whole government business by proper extension of the civil service rules, would put the Government on a business basis. It would make economy and efficiency and unmake extravagance and incompetency. It would relieve the administration of all the petty troubles that the patronage power imposes.

We have traveled, on the whole, a long way toward that ideal; but none the less there is still a powerful sentiment that the spoils belong to the victors, and that there ought to be enough spoils to go around.

This town of Washington is jammed full of office-seekers, and they are making life a burden to cabinet members, congressmen, senators and every friend they suspect of a bit of pull. Each one represents some elements of political strength. The disappointed ones will go home disgusted and sore. There's no way to prevent that, and by the time four years have rolled around the disaffection, no matter how unreasonable, will be a serious factor. It is a vastly bigger danger to the administration than any quarrel between Wilson and Bryan, or between the administration and the senate leaders, or between Mr. Wilson and Speaker Clark. A lot of nonsense is being written and read, and to some extent believed, about feuds among the big men of the Government. Forget it. Little things and little men are going to do the most harm.

He Knows How Medicine Tastes

TWO years ago Mr. Bryan came to Washington and made a bitter fight for control of the Democratic senate caucus. Though beaten, he has been fighting ever since for the victory at this year's reorganization. Yet, when the victory was in his grasp, he gave it up. He was willing to accept the dictum of the man who has now become his chief. It must have caused some acute pangs, but he took the dose and stood by the President. There isn't likely to be a more distasteful concoction served to the Secretary of State during an entire administration. The fact that he looked pleasant and took the medicine on this occasion goes far to convince me that he is determined to be a good soldier, amenable to discipline; to work in harness, and to do everything he can for the administration's success.

Washington is jammed full of office-seekers, and they are making life a burden to cabinet members, congressmen, senators and every friend they suspect of a bit of pull. The disappointed ones will go home disgusted and sore. A lot of nonsense is being written about feuds among the big men in the Government. Forget it. Little things and little men are going to do the most harm.

Sunday Reading

Jacob at Bethel

By Rev. Chas. O. Bemies

Sunday-school lesson for April 13th: Gen. 28, 10-22. Read Chapters 28-31.
Golden Text: I am with thee, and will keep thee in all places whither thou goest.—Gen. 28, 15.

The Bible, especially in the Old Testament and the four Gospels, is a country-life book. Let us interpret it accordingly. We believe that the Bible is a true record of facts.

BE SURE your sins will track you down. Jacob thought that his underhanded meanness would help God's plans in making him the successor of his father Isaac. It's only a black-hearted scoundrel who "does evil that good may come." Esau vowed to kill Jacob for stealing his blessing and birthright, whenever their father would die. Rebekah instantly warned her favorite son to run away and remain until Esau cooled down; but she stayed him long enough to get another rousing blessing for him out of Isaac, who was told that Jacob was going up to his relatives at Haran to get a wife. We despise nowadays the deceitfully tricky son who gets his old father to favor him in his will above the other brothers and sisters. There's lots of it done through the country.

Jacob sold out cheaper than did Esau, and had to live in exile from his father and mother for many years. But don't forget that Esau stayed at home, managed the estate, inherited all of Isaac's property and had all the rights of the first-born son, except the one thing of receiving the blessing. Jacob never inherited a cent. Esau got it all and started a new tribe with his heathen wives. Rebekah knew that Esau would get over his mad fit after a while, but didn't know that she would never see her favorite again. She lived in domestic trouble with Esau's heathen wives the rest of her life. Trickery brought her misery and separation from Jacob and accomplished nothing good to herself or Jacob. A man can't be a gumshoe schemer without hurting himself more than anyone else. The cowardly Jacob sneaked off alone and afraid on his long northward journey. Fearing Esau, he must have hot-footed it pretty lively for the first fifty miles, then felt comparatively safe at Bethel, for this was where his grandfather Abraham had stopped years before on his way down to Canaan and had built an altar to God. Jacob was homesick and sorry for his treachery to his brother. He was humbled. How do I know? Why, God's heavenly comfort comes only to those who repent. You felt mighty bad when you first broke the old home ties. If you had gone out in disgrace, you'd have felt infinitely worse. Jacob's earth couch and smooth stone pillow were a common thing then. A little log or a wooden head-rest was the style, and is yet in many countries. Jacob came of a hard-headed race of people.

God met his repentant misery by the vision of the lighted ladder from earth to heaven. Just notice where the angels came from who walked that ladder. They didn't descend from heaven first, but the Bible distinctly declares that the angels began first ascending and then descending! God renewed his promise to Jacob which He had made to Abraham. Heaven is around us all the time, and most of us are too senseless or taken up with our own affairs to realize it. God is not in His heaven. He is here and everywhere. That man has made the greatest discovery of his life who finds that the "barn, the cultivated field, the meadow, wherever his work calls him, is in continuous turn the gateway of heaven. The housewife, singing gospel hymns about her work, discovers for herself and family that the home is a gateway to heaven.

The gate of heaven, instead of swinging outward, swings toward us, letting the fullness of heaven flood us round about. If you want to get to heaven, first let heaven into you.

Jacob's Meeting with Esau

By Rev. Chas. O. Bemies

Sunday-school lesson for April 20th: Gen. 33, 1-15. Read Chapters 32-34.

Golden Text: Be ye kind one to another, tenderhearted, forgiving one another, even as God for Christ's sake hath forgiven you.—Eph. 4, 32.

JACOB had the true instinct of a bargain-maker. He closed up the deal with God at Bethel, whereby, if God would prosper him and bring him again to his father's house in peace, he would give Him the tenth of his increase. If God would give him ten tenths of prosperity Jacob would give Him one tenth!

Well, who wouldn't? But do you? God wants us to bargain with Him and prove Him out. It's His way, so much for so much. But He always gives us the big end. Most of us have not the nerve to make a square bargain with God. Jacob had. Filled with a new, inspiring purpose, he finished his five-hundred-mile journey to Haran, and by special kindness to his cousin Rachel was gratefully welcomed into his Uncle Laban's house. Here Jacob made another bargain.

He loved Rachel, but had no property to give as a rich dowry. He figured it up and agreed to work for his keep for seven years for Rachel. Nothing small about that. Seven years is a long time, but they seemed short to the earnest lover. Then Jacob got hit with the boomerang he had thrown at Esau, for Laban tricked him by substituting the elder Leah for Rachel. Although Jacob's disappointment was keen, he bravely took his medicine and started in to work another seven years for his beloved Rachel. Then he wanted to go back home. But Laban, becoming really prosperous for the first time in his life under the wise management of Jacob, asked him to name his own wages to stay on with him. Jacob saw the chance of his life, drew up his harmless-looking agreement for the off-colored cattle, which seemed to the unthinking Laban to be wonderfully easy terms, and then began to scientifically breed all of Laban's flocks and herds for the off-colored variety.

In six years' time he had succeeded in breeding over to his own account nearly the whole of Laban's live stock. Laban and his sons became indignantly jealous. I don't blame them. Jacob thought it was time to return home, and so with his family, his servants and his multitude of live stock he quietly slipped away one fine day without saying good-by. Laban chased him up, and they finally made a peace bargain. Jacob was a good bargain-hunter, but he was terribly worried about what his brother Esau would do when they met after an absence of over twenty years. Repentance, humiliation and fear stung him deep. Yet he had faith to believe all would be well, for God appeared to him on the way and reassured him. Yet he used every precaution and divided up his large present to Esau into five flocks and herds with quite a distance between each, so that Esau would be progressively softened and pleased on the instalment plan as each bunch of fine live stock was presented to him. It seems that Esau with his four hundred men started out to meet Jacob with hostile intentions; but Jacob's diplomacy won out. He knew Esau's generous nature, and when they finally came within sight Jacob prostrated himself seven times to the ground and called him lord, thus recognizing Esau as the rightful heir. Jacob's repentance and humiliation were complete. Esau was deeply moved. They warmly embraced and wept on each other's shoulders like the strong men they were. The one was generously forgiving, the other deeply repentant. Both had ripened into noble-hearted men.

The neighbor who will not repent of his meanness keeps hell within him. And the neighbor who will not forgive is meaner than the man who has injured him.

The Tomb of the Princess

By Rev. Richard Braunstein

AN INFIDEL German princess on her death-bed ordered that her grave be covered with a great granite slab and that around it should be placed solid blocks of stone and the whole be fastened together with clamps of iron, and that on the stone should be cut these words: "This burial-place, purchased for all eternity, must never be opened." Thus she meant to proclaim, in a public manner, that her grave was to be opened—never.

It happened that a little seed was buried with the princess, a single acorn. It sprouted under its stone covering; its tiny shoot, soft and pliable at first, found its way through a tiny crevice between two of the slabs. And there it grew, slowly but surely, and there it gathered strength until it burst the clamps asunder and lifted the immense blocks and turned the whole structure into a mass of upheaved rocks. The oak grew to be a mighty tree, and according to the story it still stands overshadowing the now opened tomb of the princess.

From the above tale we learn this important lesson: in every grave there lurks a tiny seed of the resurrection life of Jesus Christ. That seed cannot perish. It is germinated by the warm south wind which blows from the Father. It shall grow. It shall be nourished by the sunshine of the Father's love and claimed by the Christ of the tomb of long ago and bloom everlastingly.



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"I CAN'T make you out, that's all," said big Allen White, standing in a bewildered and somewhat wounded state of mind while his sister Anne put a match to the little fire that he had laid in their rather formidable and unhomelike sitting-room. It was two days before Easter, but Easter came early that year; so early that looking beyond Anne's stiff and spotless window-curtains the fields of "big Allen" stretched away to the creek, still brown and unyielding of any living thing.

"Jest you don't talk to me, Allen," said the girl, getting to her feet and arranging her little white apron just so. "Don't talk any more. I've had all I can stand."

"What have you had? I guess you've done the most talking."

Anne, almost lost to a desire to make a face, child fashion, at her big brother, compromised with a little doubled-up fist which she had the good grace to hide behind her back, and in some way the warlike gesture comforted her troubled spirit.

"Well, perhaps I've done some talking. Goodness knows I've had good cause. But you've done the giving, Allen White!

Now finish it up. You can give a cake to the fair. Make and give it, if you can—I won't!" And with that, little Anne vanished with a good healthy slam of the door. Allen followed her to the kitchen, with a sudden light of understanding breaking upon his dull, kind spirit. It seemed to him as he stood and watched Anne that she perhaps had, after all, something to be angry about. He had never dreamed she would mind his giving the dog away, his own dog, but now as he looked back he saw that Anne must have loved the big Irish setter as much as he himself had. Still, Jean Darrow had needed Chief much more than either he or Anne, and the dog had been his to give if he chose.

"Anne," he said at last, "is it about Chief? I'll get you another dog next time I see a good one for sale, but Jean Darrow was frightened nights up at the tenant-house on old Bailey's farm, so I told her she could have him."

Anne gave a short little laugh. "Jean Darrow must be gettin' mighty timid all of a sudden," she answered. "And it's not a good trait in a school-teacher, let me tell you that. I've heard there's nothing so catching as fear. First thing you know all the little children in Jean's school will be growing as scary as rabbits. Lot of good they'll be when they grow up!"

Allen White turned quickly away to hide the little smile he could not control, and came face to face with Anne's tin cake-box, which stood on a table with its door wide open and its two shelves absolutely deserted of good things to eat. At sight of it Allen came quickly back to their point at issue, and once more besought Anne.

"About the cake," he said cautiously, "Jean's little fair really needs it, I guess. You make it, like a good girl, and if you need anything extra for it I'll drive into town and get it."

He tried not to notice the wrath that sprang into Anne's face. Anne, his little sister, always so frank and sturdy and full of willing friendship, to be transformed into this obstinate, stormy, jealous young person! He could hardly bear it, especially as he thought of the gentle cause of it all.

"You go along, Allen," Anne threw out at last; "I want my kitchen to myself. I don't approve of Jean Darrow's fair—" "It's to get money enough to start a little library in the school. It's a fine—" Anne took no notice of the interruption, but went on. "And I'm not going to make a cake for it. My land! Everything is for Jean Darrow these days. When I've been out and come back to the house, I look around to see what's gone now."

"That's absurd," cried Allen with dignity. "All I've given her is the clock out of the spare-room and—Chief."

If he had looked closely, he would have seen Anne's lips tremble at that, but he was glaring around the room by this time. It took a good deal to make big Allen White angry, and Anne had finally achieved the "good deal." Brother and sister stood for a moment like enemies, then suddenly Anne cried:

"Allen, Allen, you're in love with her!" And Allen said very simply, "Yes, I am."

The girl pressed both her hands against her throat, panting, and after a moment she asked, "Are you going to marry her?"

The Cake She Would Not Make

By Claire Wallace Flynn

Illustrated by Stockton Mulford

"Yes," replied the big man, "I am."

Before the burning eyes, the heaving breast, the pent-up emotion of his sister, Allen White fled, leaving Anne to wage the battle by herself. For now it seemed that the desolation she had felt a few moments before was nothing to this new sorrow.

When Allen married the young school-teacher he would bring her here, here into Anne's home, where she and Allen had lived so happily ever since they had been left young orphans together. Then this no longer would be her little dominion, but Jean's. Doubtless Allen would wish her to live with them, but could she? And no matter how hard she worked for his comfort and happiness, there was someone now whose slightest word and glance counterbalanced all her brave efforts.

The bleak March winds raced across the fields and came knocking at Anne's window sorrowfully. The house was very quiet, for there was not even Chief to speak to, and it is small wonder that Anne's brown head went down until it rested on the table and that a passion of hot tears tore their way from her.

How long she lay there tossed by her loneliness she never knew, but the kitchen was quite shrouded in dusk when she finally dried her eyes and

looked about her. In the other room the little fire had gone out, and there was supper to get and innumerable small duties to be attended to, so Anne tried to be brave in her old way, and smoothed her hair, and set about her preparations, keeping her lips steady, but listening for Allen's footstep on the porch with her heart as well as her ears.

When she had finished laying the table, putting one of her bright geraniums in the center of it and spreading forth her prettiest china as a sort of peace-offering, she went out and stood on the steps looking across the south meadow, waiting for him. But he was not in sight. All the little valley lay very quiet and deserted. Early lights twinkled palely from the few farmhouses within her vision, and after one long look in the direction of Bailey's sprawling, ill-kept fields and his row of stark birch-trees, behind which his tenant-

house provided Jean Darrow with the semblance of a home during the school term, Anne turned indoors with a shiver. The grayness of the scene had overcome her, and suddenly it came to her mind that this was Good Friday! The thought made her shiver a little more, for down beneath a certain bristling manner the girl was a creature of fine, sensitive thoughts and feelings. Well, she thought, trying to cheer herself up, the saddest day and the gladdest day of all the year were only one day apart. She had read this in verse somewhere.

By seven o'clock, Allen not having come in, she ate a cheerless meal alone and put his away to keep warm. By eight she was in a panic, for he never had left her like this before. A half-hour later she threw a long cape about her shoulders, lighted

a lantern and ran out into the gusty night. Never for a moment did she have a doubt as to the direction she should take, but started across the south meadow toward Bailey's wind-break of birches. It was a long walk, and Anne was breathless when she finally reached the tenant-house on the Bailey farm. It was a small affair of two rooms, but Jean Darrow had made a little bower of it and loved it in preference to boarding in the neighborhood.

Anne knocked at Jean's door, but received no answer. After a moment she pushed open the little side entrance and found herself in a tiny white bedroom. Beyond she could see into the living-room, and her impulse to enter was checked at the sound of voices, Jean's and Allen's.

Anne, detesting above all things an eaves-dropper, turned to go, but she heard her own name spoken in the other room, and like a true woman was rooted to the spot.

Jean was speaking from the depths of a big armchair before the fire, and as she spoke one pretty hand stroked Chief's head as he stretched beside her.

"My poor little fair," said Jean with a sob in her voice, "is going to be a miserable failure, and I wanted so to get the library started for the children—poor little bookless things most of them! And it would have been all right if Anne had helped—Anne is such a wonder!"

Anne pressed back in the shadow and waited.

"I've asked you not to mention Anne to me," broke in her brother's deep voice. "I'm totally disappointed in her. She has made me miserable to-day—that's why I came here so early!"

"Oh!" cried Anne in her heart, "I've driven him away from me!"

And Jean's voice answered Allen with: "It's my fault, Allen dear. But after this nothing must come between you and Anne—I won't have it, because I love you both; yes, don't look so surprised, I love Anne, and have wanted her love in return, but I suppose it is hard for her. She can't realize my side of the question: how lonely and unprotected I am, and how much you've meant to me, how I couldn't help—" Here the sweet voice broke entirely, and Anne heard Allen cry out to her, "Jean! Jean! Don't, dear!"

"No," went on Jean Darrow after a moment, "no, Allen; it's no use, I can't rob Anne like this. Perhaps some day later, when I've taught her to love me enough to let me share her home, come to me again and ask me. And, Allen, take Chief back; she must miss him frightfully. I'm afraid we both have been a little cruel to her!"

From her hiding-place Anne saw a tall slim figure rise from the deep chair before the blazing logs and the next moment disappear with a little cry of protest within

the huge arms of Allen White. Anne put both hands across her eyes, because she had never before been the witness of a love scene, and it sent a sense of shame flaming over her that she should be there.

During the next few moments, with the sound of Jean's sobbing and Allen's slow

earnest words of comfort still in her ears, she managed to slip out of the little house, pick up her lantern and start madly across the fields again. Only one word beat at her heart: Jean! Jean! Jean! Jean who defended her to her own brother! Jean who only wanted to share her home with her! Jean who was as lonely as herself! Jean who loved her! Jean who back there in the little tenant-house was making the biggest sacrifice a woman is capable of! This was the Jean she had stooped to be jealous of, to treat with littleness and anger! Burning with conflicting emotions, she at last reached her own home and entered it with head high and a new spirit winning its way with her.

"I'm glad it's Easter-time," she said, as once more she lighted the fire in the sitting-room. "It stands for a new birth, a rising to something we never were before. I've heard it preached often, but it never, never meant anything like this." And she threw on a generous log, thinking of Jean's big fire, and did some strange things with the furniture of the room, making it look more homelike, and set a lighted lamp on the table, with Jean's picture, brought from a dusty drawer, beneath it.

The kitchen seemed to come to life in like manner under her suddenly nervous hands. The stove was soon glowing, and Anne, with a big apron on, was beating up eggs and butter in a huge yellow bowl.

The geranium, unused to such performances at such late hours, threw out a gay pungent odor to celebrate the event, and as three large pans of a most superior layer-cake were finally put into the oven footsteps and a familiar bark were heard outside.

Anne flew to the door and let Allen in. "Up yet, Anne?" asked Allen in rather a guilty tone.

"Yep," sang out Anne cheerfully. It was so nice to be cheerful again! "Yep. Why, Allen White, you take Chief right back to Jean. You won't mind the walk, and it is a lonely place for her to be. I didn't realize it before. And, Allen,"—all in one breath,—"come back in double-quick time, will you, so you can help me beat the eggs for the filling; the cake is most done. Tell Jean, will you? And I'll be up first thing in the morning to help her with the fair. Those children must have their books."

Here Anne halted for breath, and standing on tiptoe took hold of her astonished brother's shoulders.

"Allen, Allen," she said with a most unusual softness in her voice, "Easter is a mighty sweet season, isn't it? Out of the thing that once gave us pain comes a big happiness if only we're wise enough to take it!"

"What has happened to you, Anne—little Anne?"

"Sudden change of heart. Isn't that what the minister would call it?"

Allen smiled.

"And," she went on, "you had better take advantage of it; I don't know how long I can keep it nice and soft like this."

Here was the old, jolly Anne again; the girl whom Allen could understand and with whom he felt infinitely at home and happy.

"But just what happened?" he insisted. It must have been a big-something. Some fool people might ask you if you had had a vision.

"I had," said Anne, and thought again of the two figures standing so close together before the fireplace. A deeper color burned in her cheeks. "A lovely vision; one I'd only read about in books before this."

"You've one on me," returned Allen, in the latest slang phrase, and Anne choked a little with sudden humor.

"Oh, no," she laughed, "this vision was on you, my dear. There, I'm getting common and horrid, but too much emotion is bad for my nerves. I think I shall have to scold someone before I can feel quite myself again."

"Go ahead and scold," smiled Allen. "I sha'n't mind."

"Thanks, but I'll scold Jean to-morrow, and it will be just as good."

"Ah, Jean!" said Allen. "Well, however this has all come about—"

She turned away from Allen's questioning look, from his sudden grasp of her hand.

"Give Jean my love," she said, smiling, as she pushed the big fellow out of the door, and come back soon, for I sha'n't have you to myself much longer."



Anne White



Jean Darrow



Anne, with a big apron on, was beating up eggs and butter in a huge yellow bowl

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A Luncheon-Set of Crochet and Linen

Designed by Evaline Holbrook



THE country mother, who likes her table and home to be as pretty as her city sister's, but who has not the time to spend on them, will like the crocheted luncheon-set illustrated on this page.

This set is practical for family use, for breakfasts, and for suppers too when the main meal of the day is dinner eaten at noon. The crochet and linen are heavy and durable, wearing extremely well, even if frequently laundered, and it will materially lessen the weekly wash if they are used instead of large tablecloths, without hurting the appearance of the table any; making it prettier, in fact, than when covered with a large cover.

The set includes a square centerpiece and twelve square plate doilies and smaller doilies, for butter plates and tumblers, may be made by using the center star motif and putting the linen hem with its crocheted corners around that. In addition to the centerpiece and the large and small doilies, the set might also include a scarf for the sideboard in the dining-room. Like the centerpiece, this scarf should have a crocheted square at each corner, with the narrow heading crossing the ends and running along the sides.

Napkins might also be made to go with the set. They should be of the same linen, but should have no crochet excepting the beading, inserted all around, just above the hem.

Plain linen in a heavy quality is combined with the crochet. A soft, rather loosely woven linen is best, because it looks prettier when done up. Nothing could be lovelier for the purpose than one of the better grades of linen crash sold for kitchen toweling. The same pattern is used for the doilies and the four corners of the centerpiece and it is worked in the kind of crochet with which every country woman is familiar. It is made of white linen spool thread No. 40—a thread sold by almost every small country store—and a fine steel crochet hook.

Working the Square Motif

Begin with a chain of one hundred and twenty-eight stitches, turn, skip three chain stitches, one double crochet in each of the others—one hundred and twenty-four double crochet in all.

Second Row—Turn, chain three, skip the first double crochet, one double crochet in each of the next three, *chain two, skip two, one double crochet in the next, and repeat from * until thirty-nine holes are made in the row. After the last hole make four double crochet instead of one. Each row is begun and ended like the second row.

Third Row—Turn and make three double crochet as usual, one hole, two double in each hole and one double crochet in each double crochet until one hole remains, one hole, four double crochet.

Fourth Row—Turn and work three double crochet, *one hole and after it four double crochet. Repeat seven times from *, one hole, seven double crochet, one hole, seven double crochet, then work one hole and four double crochet alternately to the end. In stating the number of double crochet in each cluster the stitch with which the preceding hole was closed is included.

Fifth Row—Turn as usual, and after the double crochet make one hole, and after the hole seven double crochet. Then work one hole and four double crochet alternately six times, one hole, seven double crochet, three holes, seven double crochet, one hole and four double crochet worked alternately six times, one hole, seven double crochet, one hole, four double crochet.

Sixth Row—Turn and work three double crochet as usual, one hole, four double crochet, one hole, forty-three double crochet. Make five holes across the center of the row, then forty-three double crochet, one hole, four double crochet, one hole, four double crochet.

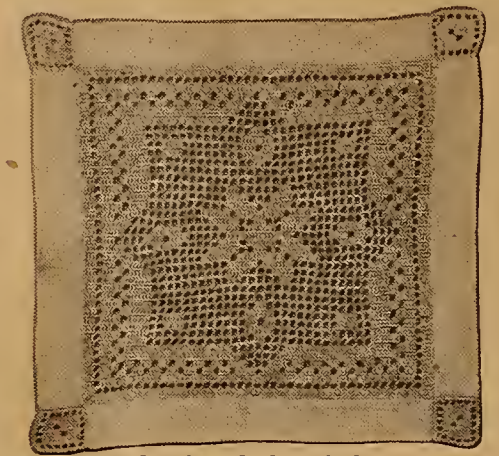
Seventh Row—Turn and work three double crochet as usual, one hole, seven double crochet, one hole, thirty-seven double crochet, seven holes across the center, thirty-seven double crochet, one

hole, seven double crochet, one hole, four double crochet at the end of the row.

Eighth Row—Turn and work three double crochet as usual, one hole, four double crochet, one hole, ten double crochet, thirteen holes, four double crochet at center; thirteen holes, ten double crochet, one hole, four double crochet, one hole, four double crochet.

Ninth Row—Turn and work three double crochet, one hole, seven double crochet, one hole, seven double crochet, twelve holes, ten double crochet at center; twelve holes, seven double crochet, one hole, seven double, one hole, four double.

Tenth Row—Turn and work three double crochet, one hole, four double crochet, one hole, ten double crochet, two holes, seven double crochet, eight holes, four double crochet, one hole at center; four



Crocheted plate doily

double crochet, eight holes, seven double crochet, two holes, ten double crochet, one hole, four double crochet, one hole, four double crochet.

Eleventh Row—Turn and work three double crochet, one hole, seven double crochet, one hole, seven double crochet, two holes, seven double crochet, eight holes, ten double crochet at center; eight holes, seven double crochet, two holes, seven double crochet, one hole, seven double crochet, one hole, four double crochet.

Twelfth Row—Turn and work three double crochet, one hole, four double crochet, one hole, ten double crochet, thirteen holes, four double crochet at center; thirteen holes, ten double crochet, one hole, four double crochet, one hole, four double crochet at the end of the row.



Square centerpiece with filet crochet corners

Thirteenth Row—Turn and work three double crochet, one hole, seven double crochet, one hole, seven double crochet, twenty-seven holes across the row to the other end; then make seven double crochet, one hole, seven double crochet, one hole, four double crochet.

Fourteenth Row—Turn and work three double crochet, one hole, four double crochet, one hole, ten double crochet, twenty-seven holes across the center; ten double crochet, one hole, four double crochet, one hole, four double crochet.

Fifteenth Row—Turn and work three double crochet, one hole, seven double crochet, one hole, seven double crochet, ten holes, four double crochet, five holes across the center; four double crochet, ten holes, seven double crochet, one hole, seven double crochet, one hole, four double crochet.

Sixteenth Row—Turn and work three double crochet, one hole, four double crochet, one hole, ten double crochet, ten holes, seven double crochet, three holes at center; seven double crochet, ten holes, ten double crochet, one hole, four double crochet, one hole, four double crochet.

Seventeenth Row—Turn and work three double crochet, one hole, seven double crochet, one hole, seven double crochet, ten holes, ten double crochet, one hole at center; ten double crochet, ten holes, seven double crochet, one hole, seven double crochet, one hole, four double crochet.

Eighteenth Row—Turn and work three double crochet, one hole, four double crochet, one hole, seven double crochet, eight holes, ten double crochet, one hole, sixteen double crochet at center; one hole, ten double crochet, eight holes, seven double crochet, one hole, four double crochet, one hole, four double crochet.

Nineteenth Row—Turn and work three double crochet, one hole, ten double crochet, ten holes, ten double crochet, two holes, four double crochet at center; two holes, ten double crochet, ten holes, ten double crochet, one hole, four double crochet.

Twentieth Row—Turn and work three double crochet, one hole, seven double crochet, four holes, ten double crochet, five holes, seven double crochet, one hole, ten double crochet at center; one hole, seven double crochet, five holes, ten double crochet, four holes, seven double crochet, one hole, four double crochet.

Twenty-first Row—Turn and work three double crochet, one hole, four double crochet, four holes, seven double crochet, one hole, seven double crochet, five holes, twenty-two double crochet; five holes, seven double crochet, one hole, seven double crochet, four holes, four double crochet, one hole, four double crochet.

The twenty-first row is the center row of the square. The second half is worked the same as the first, and for it the directions for the first half should be reversed, beginning with the twentieth row and working back to the first row. When all the rows are finished, work in single crochet on all the edges of the square, and fasten off. All the squares of the set are made in the same way.

Corners Crocheted for the Hem

The little squares which form the corners of the doilies and the centerpiece are worked as follows: Chain twenty-three, turn, one double crochet in the eighth chain from needle, *chain two, skip two, one double crochet in the next, and repeat from * until there are six holes in the row.

Second Row—Turn, chain five, one double crochet in the second double crochet, then one double crochet in each double crochet and two double crochet in each hole until one hole remains. Chain two, one double crochet in the final double crochet.

Third Row—Turn, chain five, one double crochet in the second double crochet, six more double crochet along the row, one hole, four double crochet, one hole. Repeat the third, second and first rows, then work in single crochet all around, and fasten off.

Work the beading inserted above the hem of the centerpiece as follows: Catch the thread in the end of the first row of a large square, make a chain seven inches long and catch it

to the corresponding row of a second square. Turn, chain two, catch in point of same square, then make one double crochet in each stitch of the chain. Catch in the point of the square on which the work was begun, and fasten off. Work in between each two squares in this manner, joining them in such a way that they fall into proper position, one at each corner of a big hollow square, the sides formed by the chains just made. Work in single crochet all around this hollow square, on the single crochet round make one round of holes (increasing at the corners to keep them flat), then work another round of single crochet, and fasten off.

Use heavy linen for the luncheon-set as described above. Place the hollow square of crochet upon a square of linen, and whip it down on the right side.



A Page for Our Boys and Girls



Conducted by Cousin Sally

Games for April Recess

By Emily Rose Burt

HERE are some new games for you to play at recess or after school or on Saturday afternoons in spring.

The Game of Lunch

Any number of children may play this game. One is chosen to be "eater" and another to be "cook." The "cook" goes to each child in turn and whispers the name of some article of food for the school lunch-box, as sandwich, ginger cookie, sweet pickle, snow apple. When each child has received a name, the "cook" stands back, and the "eater" comes forward. The "lunch" players meanwhile form in a row opposite.

The "eater" now calls out the name of some article of lunch, saying, "I choose an egg sandwich," or "I choose a cranberry tart."

Whichever child has been given this name by the "cook" must start and run to a given goal before the "eater" catches him. If the "lunch" child succeeds in reaching the goal, he may again take his place with the rest of the "lunch," but if he is caught he is called "eaten" and must stay at the goal. If no one has been given the name which the "eater" happens to call, the "eater," after waiting a due amount of time, must call for something else. The game continues until all the players have had their names correctly guessed by the "eater" and have been caught and left at the goal.

Frog in the Pool

This is a good game to play in muddy weather, though the ground should not be too soft.

Draw a circle about twenty steps in diameter in the dirt with a sharp stick, and then in the exact center place a large stone or a baseball bag. If the ground is not soft enough for the stick mark to show plainly, make a ring with sticks.

One child is "it," or "boy," and stands inside the circle line anywhere. The object of the game is to get all the children into the circle, so making them "frogs in the pool."

The children outside the circle must try to run in and touch the stone in the center without being caught, but if they are touched by the one who is "it" while they are within the circle line, they are immediately caught and must remain idle inside the circle, mere "frogs in the pool."

They cannot help the leader catch other "frogs," nor can they help the players outside in any way.

A child may try to touch the central stone as often as he likes, and, in fact, he must continue to try to touch it until he is caught. The last one caught is the next leader, or "boy."

Part of the fun in this game is that while some of the players are running in at one side of the circle and the "boy" is trying to catch them, others are getting in from another side, and the "boy" has to be very lively. It is considered very slow for the "boy" to stand on or by the stone all the time.

Rain and Sun

Two goals are chosen in this game. The side of the schoolhouse or the porch-steps and the fence opposite are very suitable for these goals.

One child is "it" and stands between the two goals. The rest of the children are divided equally into two parties, and each party has a goal. One party is called Rain and the other Sun.

When the leader who stands between the goals calls out "Rain," the "Rain" party must run over to the "Sun" goal, each child trying of course to avoid being caught by the one who is in the center.

If the leader calls "Sun," the "Sun" party must run to the "Rain" goal, also trying to avoid being caught. Of course each child must remember whether he is a "raindrop" or a "sunbeam" in order to

know when to run. No child can stay "on goal" after the call to run comes; if he does, it is the same as if he were caught.

If the leader calls "April," both "Rain" and "Sun" parties run at the same time, each to the opposite goal. This is a splendid time for the leader to catch someone, for the players are quite sure to get mixed up and confused. Any child who is caught must help catch the others and the game goes on until "Rain" and "Sun" have all been caught.

The first child caught, no matter on which side he is, becomes "it" for the next game.

This is a very nice game to play in April.

Cousin Sally's Letter

MY DEAR Little Cousins—Here it is spring again; not the make-believe spring of the first warm days of March, but the truly-true spring of April, when we begin to wish the school term were over and we could spend our days in the woods hunting for the first wild flowers. Of course no boy or girl who belongs to our club would ever play hookey from school. Our standards of right and wrong would not permit that. But after school hours, when lessons and chores are finished, let us spend as much time in the woods as we can, learning all about the wild things that are peeping up out of the ground. Let us learn to see their beauty. So many country folks live their whole lives without learning to see. Perhaps some of you know the story of the old farmer who thought his farm nothing but a barren, rocky hillside, until a great artist came to the farm and showed the farmer the beauty of the gray rocks that were piled high on top of one another, and the glorious view, and the wonderful sunrises and sunsets one could see from the hilltop. And when the farmer learned to see those things, he discovered that he really was very, very rich, instead of be-

ing poor as he thought all along. Open your eyes wide, and look for the violets and the little snowdrops and the lovely bit of green moss and the tiny nest of the robin or the ground-sparrow, and learn their beauties so that you may enjoy them. But don't touch the birdies' nests. Remember that you are a Giant to the Mother Birdie, and when you take her eggs or the little ones from the nest, she feels as badly as your mother would if a Giant took you. No little club member would do that. Go out and have a good time. Learn to love the flowers and the birds, but never, never forget that no club member would be cruel to the helpless things around him. Lovingly,

Cousin Sally.

Letters from Club Members

DEAR Cousin Sally—As I have been reading the letters in FARM AND FIRESIDE, which are very interesting, I will write one too.

I go to school in the country, and am in the seventh grade. I live on a big farm. We have fifteen horses and a flock of sheep, and a number of cows and pigs.

Your cousin, SUSIE BIXLER.

DEAR Cousin Sally—I have been taking FARM AND FIRESIDE about three years, and I have enjoyed reading your page. I am ten years old, and am in the fourth grade. I hope to be in the fifth grade next year. I would like to have you write and tell me about The Gift Club.

Your cousin, GRACE BALDWIN.

DEAR Cousin Sally—I received the letter and club button, and I was pleased with the club button. Are there any club girls near me? If so I would like to write to them. I am in the fourth grade at school. I have a little puppy; he is just as bright as can be. I like to draw pictures, and I am going to take lessons some time.

Your cousin,

GWENDOLYN SPINK.

The Fate of the Fire Fairy—By Grace Boteler Sanders

"KATHERINE, come wipe the dishes for Mama," called a sweet voice from the kitchen. "In a minute, Mama," called Katherine from her rocking-chair by the open fire, and Katherine really did intend to come, but she was so tired and sleepy and the seat by the fire was so comfortable that before the little girl knew it she was nodding again. And right in the midst of her most lovely dream another voice called:

"Katherine, oh, Katherine!" The voice sounded as if it came right out of the blazing fire. Katherine looked everywhere else, and when she saw no one she looked dreamily at the fire. There he was perched on the red coals, a funny little man in a tightly fitting suit of red and yellow. He wore scarlet shoes with long crooked points. His scarlet cap was pointed too, and hung almost to his waist. His little red eyes shone comically as he smiled at her from out a misty blue veil

which enveloped him from top to toe. "How-de-do, little girl!" he laughed.

"Why-ee, who are you, and where did you come from?" Katherine sat up and rubbed her eyes sleepily. "That's a funny place to stand. You'd better jump out, or you'll get burned."

"Ho, ho, ho, ho!"

laughed the little man, crossing his legs and changing his position. "Me get burned! I guess not. Don't you know that I'm the fire fairy?"

"There's the flower fairy, and the good fairy and—" Katherine numbered every fairy that she had heard of, on her plump fingers. Then she shook her head decidedly. "No, I never heard of you."

"That shows how ignorant some people are," fumed the indignant little man. "Why, I'm the greatest fairy on earth. I cook your dinner, iron your clothes, warm your houses, run the mills, make your lights, build your houses, run your trains. Why, this world wouldn't run two minutes without us, and still you say you never heard of me. I'm astonished, astonished!"

"I didn't mean to offend you," stammered Katherine, "but I don't understand."

"You would if you could put two and two together!" returned the fairy savagely. "Your teachers at school have told you how trees and plants and other things were changed into coal, but she did not tell you, for she didn't know it herself, that fire fairies are hidden in every ounce of coal. Without us it would be useless."

"Dozens of bad fairies who were sent from fairyland to do penance for their sins are hidden in every lump of coal. Our king doesn't allow his subjects to be punished as they were in the olden time, but when they do wrong he banishes them to the coal-mines, and they must stay there until they are good enough to go back to the fairies' heaven."

"How interesting!" cried Katherine, her dark eyes shining. "But what do you do, Mr. Fairy?"

"When we are dug out of the ground, we have still other work to do. We are taken from the mine and loaded on to cars and distributed all over the whole country. If we feed the hungry and warm the needy and do our very best, when the coal falls to ashes we are sent back to the king's palace to claim our



"I'll wash them," cried Katherine

reward. I'll venture you'll think of me hereafter every time you pick up a lump of coal. Now, good-by!"

"Oh, take me with you, dear fairy!" cried Katherine, jumping to her feet and holding out her hands. "I have read in so many of my story-books how little girls and boys go

to fairyland. Dear, kind fairy, take me!" "Our king said to bring you along," he laughed, kicking Katherine lightly with the toe of his shoe. "Now, I guess you'll do. Jump on!"

The cheek which the fairy's slipper touched burned like fire. Katherine grew so small that she was able to jump on to the broomstick behind the fairy. In a moment more up they were gone. Up through the deep-throated chimney they flew and floated out on the sky, until they reached a great door of golden bronze. On it in diamond letters were the words "The Palace of the King."

At first Katherine could not open her eyes because of the wonderful light. When she did, she saw a beautiful room. Great fire ropes formed the arched ceiling which glittered like gold. The floor was of quivering, molten gold. Katherine was afraid to touch it with her little red slippers lest she should sink beneath the beautiful river. With a smile of understanding the fire fairy took her in his arms and ran swiftly toward the throne which was in the far end of the room.

The king, who had the kindest face which Katherine had ever seen, held out his scepter. "Welcome home, my Pettruchio," he breathed solemnly.

Pettruchio dropped to his knee and kissed the kingly hand. "May the smiles of heaven attend thee, O King!" he murmured. "And will it please your royal highness to speak a word to this earth child whom thou permittest me to bring into thy domains?"

The king patted the empty chair beside him. "Place her here, good Pettruchio, that she may see the blessing of righteous living."

It was a most happy day. Katherine, at the king's right hand, watched the administering of justice. She ate choice food which had been prepared for him and served from golden dishes. She played in the flower-garden, plucked fadeless lilies and was loaded down with presents. Before it was time for her to go home

Pettruchio led her to the underground cavern where the imprisoned fairies lay. She heard their shouts of glee when the miners' picks struck the ground. "Let us out," they cried, "and we'll do our work so faithfully that you will never need to complain of us again."

And immediately Katherine remembered those unwashed, tormenting dishes. "Oh, dear fairy, take me home," she cried, "and I'll try to do my duty too."

Swiftly they flew out into the night, and soon they were back in the little house.

The lamp was still burning in the front room. This time the fairy glided through the front door. "Good-by, my dear!" he called, slamming the door.

Much startled, Katherine sprang to her feet. The fairy was gone, but the unwashed dishes still stood on the table. Her mother was wearily filling the pan with hot water. "I'll wash them, dearest," cried Katherine with a skip. "You won't have to scold again." And she never did.



"Why, who are you, and where did you come from?"



Katherine stood on a floor of quivering, molten gold



This is Ralph Gullett to whom Woman's Home Companion awarded \$100 as a "Better Babies" and rural prize at the National Western Stock Association Show in Denver. Ralph lives on a small ranch near Golden, Colorado. His score averaged 96.70.

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Are children really more valuable than hogs?

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How much time have you spent this year studying how to make your baby a healthier baby than you were?

Two Iowa women started a revolution—a revolution of peace and health—when they started judging babies at the State Fair just as carefully as hogs have been judged. They measured the little bodies, they tested the little brains, and they awarded prizes, not to the prettiest babies, but to the healthiest and brightest babies.

The new idea has spread. "Better Babies" is the cry to-day. It has come to stay. You're going to be big enough to raise good hogs and still have time to raise "Better Babies."

The Woman's Home Companion is the mother in this glorious revolution. It gives prizes for every State Fair baby show that has the backing of authority from state and women's clubs. Be one of the pioneers in a movement that will go down in history as the solution of the problem that the scientists have tried for centuries to

solve. Keep up with it through the Woman's Home Companion.

Read the dramatic story of the first "Better Babies" contest in the West, the contest at the National Western Stock Association in Denver. See how the babies were scored, and see the pictures of the babies themselves, all in

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WOMAN'S HOME COMPANION**
15c a copy

The Crowell Publishing Company, Springfield, Ohio

A Collection of Pretty Waists

Models Suited to All Occasions

Designs by Grace Margaret Gould



No. 2039—Lingerie Blouse for Embroidered Patterns

32 to 44 inch bust. Material for medium size, or 36-inch bust, two and one-fourth yards of thirty-six-inch material. Pattern, ten cents



No. 2270—Double Blouse: Closed at Back

32 to 44 bust. The price of this pattern is ten cents



The above illustration shows a most attractive modification of the waist pattern No. 1979. Developed in brocaded satin, all-over lace or embroidery, this waist would be most effective and suitable for afternoon or evening wear. The underblouse should be plain net tucked or it may be shadow lace



No. 1979

No. 1979—Surplice-Waist with Single Rever

32 to 40 bust. Material required for 36-inch bust, one and seven-eighths yards of thirty-six-inch material, five-eighths yard all-over lace and three-eighths yard contrasting material. Pattern, ten cents

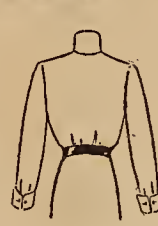


No. 2155—Costume Blouse with Long Sleeves

32 to 44 bust. The price of this pattern is ten cents



No. 2155



No. 1986



No. 1986—Tailored Waist with Large Armholes

32 to 44 bust. Quantity of material required for medium size, or 36-inch bust, two and one-half yards of thirty-six-inch material. The price of this pattern is ten cents



No. 2065—Double-Breasted Outing-Blouse

32 to 44 bust. Price of pattern for this blouse, ten cents



No. 2065



No. 2153—Box-Plaited Tailored Waist

32 to 44 bust. Price of pattern for this waist, ten cents

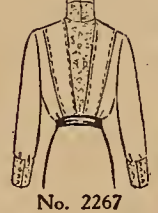


No. 1975—Kimono-Waist with Double Collar

32 to 40 bust. Material required for 36-inch bust, one and three-fourths yards of thirty-six-inch material, with three-fourths of a yard of contrasting material for collar, cuffs and girdle. Price of pattern, ten cents



This attractive waist may also be made from pattern No. 1975. The double collar in odd shape is the special feature of this kimono waist



No. 2267



No. 2267—Lingerie Blouse in Vest Effect

32 to 46 bust. Price of pattern for this blouse, ten cents



A tucked shirt-waist like the above illustration may be made from pattern No. 1984. This is another of the adaptable patterns



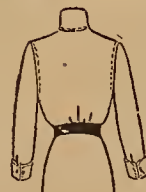
No. 2065



No. 2153



No. 1975



No. 2121



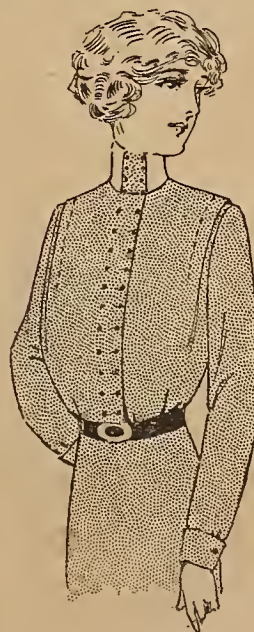
No. 1984

No. 1984—Double-Breasted Shirt-Waist with Frill

32 to 44 bust. Material for 36-inch bust, two and one-fourth yards of thirty-six-inch material, with one fourth of a yard for frill. The price of this waist pattern is ten cents

No. 2121—Tailored Shirt-Waist: New-Style Collar

32 to 46 bust. Material for 36-inch bust, two and one-eighth yards of thirty-six-inch. The price of this waist pattern is ten cents



No. 2121



No. 2103—Surplice-Waist with Long Revers

32 to 40 bust. Price of pattern for this kimono waist, ten cents



No. 2266—Tucked Waist with Large Armholes

32 to 44 bust. The price of this waist pattern is ten cents



No. 1984



No. 2266

The Cash Prizes

For Fashion Suggestions

AT THE time this issue of FARM AND FIRESIDE is going to press the Prize Contest (for the best and second best suggestions for the Fashion Page) is just closing. There has been such an overwhelming response to our request and so many fashion ideas have been submitted that in order to give each one a fair chance the judges will require a little more time to examine all the letters. The result of their decision will be printed in the next (April 26th) issue of FARM AND FIRESIDE on the Fashion Page.

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No. 2103



No. 2154



No. 2154—Tucked Waist Robespierre Collar

32 to 42 bust. The price of this waist pattern is ten cents



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The Potato Attractively Dished

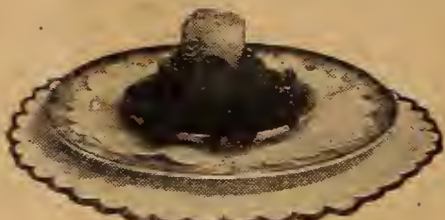
Recipes by Alice Margaret Ashton

THE country woman who takes a justifiable pride in her table often feels herself on an unequal footing with the town sister who has the markets with their tempting varieties at her very door.

The country woman's opportunity lies in her ability to make dainty and tempting dishes from the plain foods at her command, rather than in experimenting with unusual or unseasonable materials.

The potato, in itself a plain and homely enough vegetable, may be made the foundation of a delicious luncheon or supper, or an important part of a wholesome and satisfying dinner.

Boiled Potatoes—A famous Irish cook gives this as her secret for the deliciousness of her "plain" boiled potatoes. Drop the potatoes into boiling salted water.



Baked Potato, Stuffed

Leave on the jackets unless the potatoes are more than three months old. Boil moderately until tender. If new potatoes boil to pieces, steam them instead. When done, drain immediately, toss gently in the kettle, and leave covered a few minutes in a warm place.

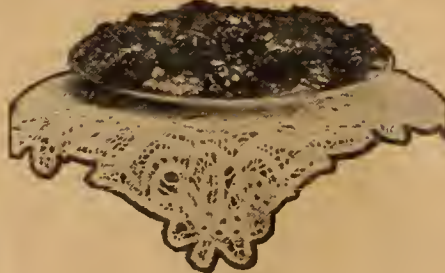
Baked Potatoes, Stuffed—Bake smooth, medium-sized potatoes in a moderate oven. This generally requires about forty-five minutes. Take from the oven, cut in two, and remove the inside with a fork. Mash this thoroughly or put through the ricer, and season with salt and white pepper. Have ready enough hot cream to moisten the potatoes slightly, and a cupful of grated cheese for each half-dozen potatoes. Mix this all thoroughly, beat up until light, and refill the jackets. Set in the oven for five minutes, and serve.

Mashed Potatoes with Peas—Mash potatoes thoroughly, season, moisten with a little hot cream, and beat until light and feathery. Have ready some freshly cooked or canned peas with a thickened cream sauce. Line a deep dish with the potatoes, laying them in lightly. Pour the peas in the center, and serve very hot.

To Use Small Potatoes—Among the first new potatoes there are always many small ones. They may be used in a variety of ways.

Scrape some of the smallest ones, and cook with green peas; when done, add cream, and thicken slightly.

Boil a quantity in their jackets. While they boil prepare a sauce by heating a pint of rich milk, seasoning with salt and pepper and thickening with a tablespoonful each of flour and butter blended. Drain the potatoes, and allow them to stand a few minutes. Rub off the loosened skins, and drop whole into the hot sauce.



Potato Loaf

Scrape, and drop into deep fat, frying a golden brown. Drain on unglazed paper, and sprinkle with salt. These potatoes look very tempting arranged around a platter of meat, or they may be served alone.

Potato Loaf—This is a nourishing dish, taking the place of both potatoes and meat for lunch or supper. Beat two eggs in a mixing-bowl, add to this a cupful of bread-crumbs, a cupful of hot mashed potatoes and one cupful each of ground walnut-meats and peanuts from which the brown covering has been removed. Mix this together thoroughly with the hands, season liberally with salt and pepper, and if it seems very dry add a little hot milk. Form this into a loaf, and place in a baking-dish. Bake in a moderate oven for half an hour, basting with a little beef-stock or hot water and melted butter. Serve hot on a garnished platter, and cut in slices. It will be a rich, dark color like a meat loaf and will serve six persons.

Potato Croquettes—Beat an egg thoroughly. Have ready some dry bread-crumbs. Mash a cupful of potatoes thoroughly, season with salt, a tablespoonful of cream, and stir into it half of the beaten egg. Form the potato into rather small balls with the hands, roll first in the remaining egg, then in the crumbs, and set away in a cool place for several hours. Just before serving fry a golden brown in deep fat. Garnish with slices of hard-boiled eggs.

Potato Salad with French Dressing—Those who do not like olive-oil in salad-dressing will be pleased with this.

Slice or chop fine cold boiled potatoes to make four cupfuls. Slice fine two medium-sized onions. Stir lightly together. A small quantity of minced chicken or veal, or salmon, or other cold fish, is a desirable addition, but not essential.

French Dressing—Take one cupful of vinegar and water, more or less sour, according to taste. Put it into a double boiler with one tablespoonful of butter, one small teaspoonful of salt and one-half teaspoonful of pepper. (If preferred, use half paprika and half pepper.) Add one tablespoonful of sugar and one teaspoonful of mustard. The mustard can be omitted, if not liked, or double the quantity can be used, without injury to the salad.

Beat three eggs thoroughly, and stir them slowly into the mixture, cooking until it is of the consistency of boiled custard. Take off fire, and add one-half cupful of cream, sweet or sour.

When cold, pour it over the potato ready in the salad-dish, and toss lightly with a fork. Set away, and keep as cold as possible till used.

The prettiest way of serving is on fresh lettuce-leaves, in individual dishes, the top garnished with slices of hard-boiled eggs. It may also be heaped on a platter spread with lettuce-leaves, the top garnished with eggs, and the dish passed about the table.

Potato Sticks—Pare large potatoes, and cut into "sticks" about two inches long and half an inch square. Fry in deep fat.



Potato Croquettes

Drain and sprinkle with salt. These sticks make a tempting garnish for cold meats or a plain omelet.

Potato Pie—This may be made from left-over mashed potatoes and cold meat or chicken, as well as from materials prepared purposely. Line a baking-dish with mashed potato. Free the chicken from bone and skin, and cut in small bits, or put through the food-chopper. Make a sauce of one cupful of milk, salt, pepper, a bit of butter and a heaping teaspoonful of flour, and pour over the chicken. Put this in the lined dish, and cover with the remaining potato. Dot the top with butter, and brown in the oven. Serve from the baking-dish.

Potato Soup—Carefully made, this is a very nourishing soup, excellent for invalids or children and for all persons of weak digestion.

Wash, pare and slice a half-dozen raw potatoes; cold boiled ones will do. Put them into a deep stew-pan or kettle with two quarts of water, and add a small piece of meat or a cupful of meat-stock. A slice of salt pork is good and preferred by some. Left-over pieces of steak or the bones of a roast are excellent for this purpose. And the soup can be made very palatable without using meat.

Put into the pot a handful of washed rice and a very small onion sliced. Macaroni, broken into bits, is a valuable addition to the soup, but not strictly necessary.

Simmer gently for three hours; do not let it boil hard at any time. If the water evaporates and leaves the soup scanty or too thick, add the desired quantity of boiling water. Then let all boil up together gently for five minutes. Remove from the fire, and season carefully with salt and pepper. A very little celery-salt improves the flavor. Some like also a touch of paprika.

Take out the bone and large pieces of meat. If liked thin, strain through a colander. We prefer it without straining. If no meat has been used, add a tablespoonful of butter and, if possible, a small cupful of sweet cream or rich milk. The cream is desirable in any case.



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CHICAGO, ILL.

The Housewife's Club

EDITOR'S NOTE—Monthly we give prizes of \$2.00 for the two best descriptions (with rough sketch) of original, home-made household conveniences or labor-saving devices, and \$1.00 for the third best or any that can be used. We also give 25 cents each for helpful kitchen hints and suggestions, also good tested recipes that can be used. We would suggest that you do not send more than two suggestions, and not more than five kitchen hints each month, because we receive so many that space will not allow us to print them all, in spite of the fact that they are reliable and practical. All copy must be written in ink, on one side of the paper. Manuscripts should contain not more than 250 words. We would suggest that contributors retain duplicate copies, as no manuscripts will be returned. The mail is so heavy that it is impossible for us to acknowledge receipt of manuscripts. Address "The Housewife's Club," care of Farm and Fireside, Springfield, Ohio.

Taking the Smart of Pepper Away—Simple flour will take the smart of red or cayenne peppers away. When a child gets pepper on its hands or in its mouth, rub flour on the hands, or give it flour to eat, and the smarting will soon stop. The flour absorbs the oil of the pepper which causes the pain. Instead of rubbing with flour, wet the place with water, daub on flour, remove the paste so formed, repeat once or twice, and the pain will be gone. A. G., Indiana.

Kitchen Hint—When getting a meal in a hurry and having to fry meat before making a milk gravy, I find it a great time-saver to put the milk on the stove in a kettle and let it heat while the meat is frying. In this way it only takes about one minute to make the gravy, as it will start right to boiling.

M. A. M., Oklahoma.

When making a buttonhole in thin goods, overcast around it first, and it will make a neater and stronger buttonhole. Mrs. W. H. F., Pennsylvania.

When baking beans, add one-half cupful of sugar and see if you don't think they are fine. Mrs. M. M., Wisconsin.



Three Kitchen Helps—Bore a hole in the broom-handle and slip the hole over a nail in the wall to hang up the broom.

Bake your cookies on an inverted tin, and they will not burn.

Line a pie-plate with the crust for your lemon-pie, then, while baking it put over it another pie-plate. The latter will keep the

crust from slipping down at the sides of the pie. Mrs. C. P. H., Ohio.

Kitchen Hint—When making syrup from granulated sugar, melt the sugar before adding the water, stirring constantly to prevent burning. The syrup will be of a rich golden color and will not crystallize on the sides of the pitcher.

Mrs. H. C. F., New York.

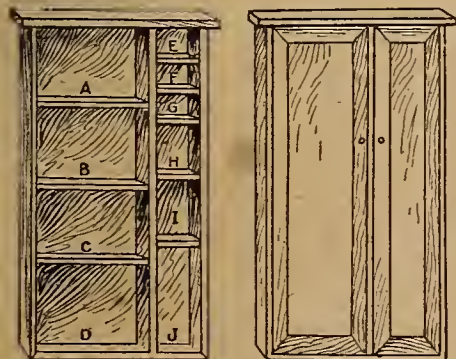
When desiring baked beans and feeling the necessity of saving fuel-bills or heat from stove in summer, try stewing them with a piece of pork until tender, then putting them in hot iron spider and frying until of the proper consistency.

Mrs. C. R. C., Ohio.

Substitute for Cedar Chest—Procure a box of the desired dimensions and enough cigar-boxes to line your box completely. The cigar-boxes, being of cedar and saturated with the scent of tobacco, will keep out moths and all other insects. The box can be painted or covered with wall-paper or covered with cretonne, the top padded for a seat and a ruffle tacked around the top with brass tacks. You can procure the cigar-boxes from your druggist, who throws them away when empty, and they are easily taken apart.

Miss I. G., Massachusetts.

Home-Made Cabinet—It often happens that there are houses which have no closets or cabinets in them. In such a case the housewife will find a home-made cabinet like the one shown below to be very useful. The material required to build a case five feet high, thirty inches wide and ten inches deep is six boards, each five feet long, ten inches wide and three fourths of an inch thick; one board thirty inches long, ten inches wide and three fourths of an inch thick; one board three inches long, eleven inches wide and three fourths of an inch thick; three



Home-made cabinet

boards, twenty inches long, ten inches wide and three fourths of an inch thick. The boards for smaller shelves should be the same in width and thickness. For the doors some quarter-inch material is required and some three-fourth-inch pieces for rim of door. In the illustrations the cabinet is shown both open and shut.

The cabinet shelves are used as follows: A for large doilies, B for sheets, C for pillow-cases, D for towels, E and F for napkins, G for napkin-rings, H for small table-mats, I for smaller doilies and J for knife and forks in the boxes. Miss E. D., Indiana.

Try dipping stale bread in milk and then placing in a paper bag in a moderate oven. It is delicious eaten while hot. This is a particularly nice way to use the ends of Vienna loaves. M. T. M., New Jersey.

Cement for Enamel Ware—Take equal parts of sifted coal-ashes, sifted table-salt and soft putty, and mix well together. Cover parts on both sides of the vessel, if large. Place the mended utensil on the stove with a little water in it, and boil about ten minutes. Wash out, and it is ready for use. Mrs. A. D. L., South Dakota.



Fig. 3

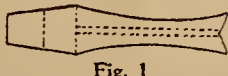
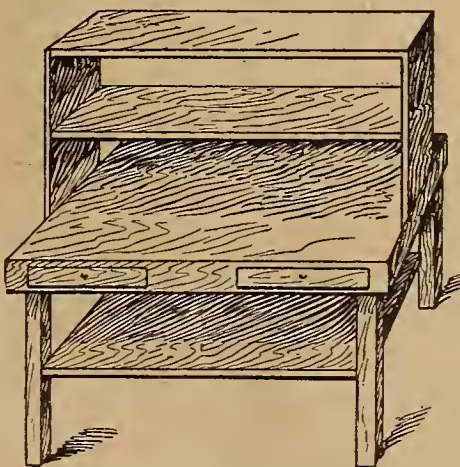


Fig. 1



Fig. 2

Saving Steps in the Kitchen—In so many old-fashioned country homes the kitchen is so large that the housewife walks many weary miles during the year in preparing the meals and washing and putting away the dishes. Much time and strength may be saved by taking a plain, ordinary kitchen table and placing an upright at each end to support two shelves over it, and one other shelf put in under it (see illustration). These will hold all baking-dishes, measures, pans, kettles, cover, and also salt, pepper, sugar, spices, extracts, etc.; in fact, everything needed in the preparation of a meal, and all to-



gether, within reach and without taking a single step. If this table is placed near the stove, a meal may be prepared and cooked with the minimum amount of time and strength. A plain home-made screen may be placed between the table and stove in hot weather, to protect the worker. Such a device, which can be made at home by any handy man, need not cost over two or three dollars and will be of inestimable value to the housewife and help her keep her health and strength as few other things would. Mrs. C. S. E.



The Winged Message

Noah's messenger was a dove. In Solomon's time, pigeons were trained to carry messages. Brutus used them at the siege of Modena. They served the Turks in their fights against the Crusaders. In mediæval wars they were more useful than ever before.

France had a carrier-pigeon mail service, with messages reduced by photography and read through a microscope.

Even today carrier pigeons are utilized as news-bearers in isolated parts of Europe.

In America, the land of the telephone, the carrier pigeon is bred only for racing. The winged word has taken the place of the winged messenger.

Pigeons may fly more than a mile a minute, but the telephone is as quick as speech itself.

The dove is the emblem of peace. The telephone is the instrument of peace. The telephone lines of the Bell System unite a hundred million people in one national family.

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Pony For You

This is "Duke"
The Prince of Pets



Send in Your Name To-day

Beautiful Buggy and Harness Too

This remarkable gift offer is open to all FARM AND FIRESIDE boys and girls. Don't you want to win "Duke," the beautiful Shetland Pony shown in the above picture? Then here is the chance of a lifetime. You can get "Duke" and his handsome buggy and nickel-plated harness, delivered to you at your very door, without spending one cent of your own money. "Duke" is a beautiful chestnut pony with a fluffy silver mane and tail. He is about 41 inches high and weighs 350 pounds, and can trot faster than most carriage horses. "Duke" is just as kind and gentle as can be and will follow his master around like a big dog.

"Duke" will be given away soon by the Pony Man of FARM AND FIRESIDE. Besides "Duke" and his fine outfit, the Pony Man will give away two more ponies and outfits and hundreds of other prizes. You have just as good a chance to win a pony as any other boy or girl, if you send your name right away.

A Few Winners of Our Prize Ponies

Each spring, FARM AND FIRESIDE holds a Pony Contest for its boy and girl friends. Hundreds of boys and girls have won ponies and other valuable prizes from this reliable paper. Here are the names and addresses of a few of the boys and girls who have won ponies. These are the proudest boys and girls in the land, and they all love the Pony Man of FARM AND FIRESIDE.

"PRINCE" won by Arthur Glisson, Solway, N. Y.
"DAISY" won by Johnnie Kielen, R. 4, Madison, Minn.
"DICK" won by Daryl Porterfield, Emlenton, Pa.
"BEAUTY" won by Wilbur Corey, R. 9, Auburn, N. Y.
"JACK" won by Virginia Jamison, Iola, Kansas.

"FUZZY" won by Allen Weber, New Carlisle, Ohio.
"CUPID" won by LaVerne Fulton, No. Lawrence, Ohio.
"WUZZY" won by Marguerite Lawson, Hopkinsville, Ky.
"PETE" won by Lena Purcell, Hallcottville, N. Y.
"BILLY" won by Iona Morton, Kernersville, N. C.

This is "Duke" with harness
and buggy complete



You
are
Sure
to
Win
a
Prize

Every Pony Club Member Gets a Prize

You are sure to win a handsome prize IF you become a member of the FARM AND FIRESIDE Pony Club, and you will not have to invest a single cent of your own money. FARM AND FIRESIDE guarantees that every boy and girl who joins the Pony Club will get a handsome prize. You are absolutely safe in accepting the promise of this big and long established paper. Don't wait. Hurry up and send your name to-day.

How to Join the Pony Club

Write your name and address on a piece of paper or on a post-card, and address it to The Pony Man, FARM AND FIRESIDE, Springfield, Ohio. Simply say:

Dear Pony Man—I have seen your pony offer. I have no pony and want very much to win "Duke" and his complete outfit. Please send me a Membership Certificate Blank so that I can join your Pony Club and become a prize-winner.

The Pony Man will gladly send you a Membership Certificate Blank together with a picture of "Duke" and the other ponies and prizes and everything necessary to start right in and become a pony-winner. Remember, all these things will not cost you a penny. Send in your name right away to-day.

Write To-day to

The Pony Man, Desk 3, FARM AND FIRESIDE
Springfield, Ohio



T-h-e---G-i-f-t---C-l-u-b

MY! SUCH a showery month April has been so far in The Gift Club! Not the usual sort of showers at all—but delightful rains of valuable and attractive gifts for our Club girls! And the best part of it is that these showers will continue month after month. There is no end to the supply of good things that The Gift Club has in store for its members.

I've just been looking over our big Club Membership Book, and it does seem to me that every girl and woman reader of FARM AND FIRESIDE has joined the Club. The Gift Club isn't quite two years old, but it's the biggest and strongest youngster you ever saw. Sometimes I feel like the Old-Woman-Who-Lived-in-a-Shoe, I've so many Club members! But there is not one too many—I want you all. It's such jolly fun to be at the head of a big successful organization like this and to be able to give to our girls just the very things for which they have been longing.

One of our Club members wrote me not long ago that she was sure I must have found Aladdin's wonderful lamp, because the Club seemed to be enchanted and the members apparently did no work at all for the exquisite gifts that they received. She was mistaken there, however, for the only lamp of Aladdin that we have in the Club is Work—but such pleasant work! When we wish for a certain gift—a bracelet, for instance,—we rub our lamp lightly; but when we want several gifts, we rub it briskly and vigorously. And the gifts are always forthcoming. That's the best part of it—our lamp never fails us.

I don't believe that I ever told you in this corner of ours the name of the lucky winner of the exquisite diamond ring that I offered last winter in a prize-contest. The ring was sent to Mrs. J. W. Lewis, of Rushville, Ohio. She was so surprised and delighted with it. Wouldn't you like to see her letter?

MY DEAR MISS WEST—I was amazed and more than delighted when I received your letter saying "You are the lucky winner of the diamond ring."

It certainly is a beauty, and I thank you heartily for the ring and the many other nice things. The teaspoons and the ladle were beautiful. When you get a present from The Gift Club, you get something worth while.

Who would have guessed that beautiful ring would come to me? I can hardly believe it's true, even though the ring is right on my finger now. Such a beautiful stone—everybody admires it.

Thanking you again for the lovely ring—and it's genuine too—I am,

Sincerely yours, MRS. J. W. LEWIS.

This spring I am planning to have another diamond ring contest in The Gift Club, and I want all our old members and a great many new ones to take part. There's no reason why you should not be just as successful as Mrs. Lewis.

Every girl who wants to earn for herself the good and luxurious things of life—pretty ornaments for her home, jewelry, books, clothes—is invited to join The Gift Club. There are no hard and fast rules, no dues and no expenses of any kind. Both married and single girls find a warm welcome waiting them. I am secretary for no other purpose than to help you, and by helping you I shall be doing a good service for thousands of other women. Doesn't that seem wonderful! But it is true, and that is what makes me so happy—knowing that I have it in my power to be a helper. Congenial and profitable employment is the open sesame to happiness. There are no drones in The Gift Club's hive, not even a queen bee, for your secretary is as busy as any of you!

Do take a peep into our Gift Club's Cupboard and see what lovely things I have stored away for you. Here are a few:

silver mesh bags, bracelets, silver toilet-sets, rings, comb-and-brush sets, clocks, table silverware, brooches, manicure-sets, chains, shopping-bags, lockets, lace curtains, books, china dinner-sets, watches, vacuum cleaners, belt-pins, fountain-pens, frames, embroidery outfits, dolls, and, oh, dear! so many lovely things besides—I can't begin to tell you half of them.

You can get any one or all of these beautiful presents—and more besides—if you join The Gift Club at once.

Now I want you to see these jottings from a few of the letters written by our successful girls:

Received the beautiful locket. It certainly is a lovely gift. G. E. A., Missouri.

Our Gift Club is just fine. The corset cover and perforated patterns that you sent were dandy. Thanks to you and all the members. I'd like to see you all. E. W. A., Washington.

Those lovely dishes were much prettier than I expected. I'm in love with The Gift Club. O. B., Kansas.

Thank you for the beautiful little manicure-set and the stationery. Next I want a kodak. Good wishes to you all. F. B., California.

The Gift Club solved all my Christmas problems. Mrs. J. W. L., Ohio.

All my girl friends wondered where I got that lovely locket and chain. J. E. D., Pennsylvania.

The Gift Club is the finest thing I ever struck, and I'm glad I joined. I can't thank you enough for all those lovely gifts, the bracelet was beautiful. I have my eye on several other things which I intend to work for. H. E. R., Ohio.

My brother was delighted with the fountain-pen that I gave him for his birthday. I'd like another for my husband. Mrs. C. C., New York.

So many of our girls are delighted with the purely social side of the Club. The Club spirit puts them in touch with things and interests outside their own lives, and it is a splendid experience for them. Do read this letter from a new Club member in Oregon:

A year ago, Jean West, I was the most lonesome girl, for there are no girls of my own age near, and I've so missed having a friend. Sometimes I used to go to my room alone and cry. Then one day I happened to be looking through FARM AND FIRESIDE and I came across your page. The letters from the girls all seemed so friendly and cheerful that I wanted to be one of you. Well, you know what happened after that! You've kept me so busy and happy that I haven't had a chance to be lonesome. I'm so glad I found you!

Now I know that you are wondering how in the world our Club members get all these charming gifts. I've purposely made our work a secret because I know how dearly all girls love mystery. I want to raise your curiosity to the boiling-point, so that you'll just have to sit down and write me a little note to find out all about it. There is a place in The Gift Club for every girl and woman reader of FARM AND FIRESIDE, and I want you to fill the particular place that I am holding for you. I'm eager to tell you our plans, and I'll be glad to whisper the secret—on paper—to you. Remember, procrastination steals more than time. It is stealing the good things that should belong to you. Better write at once. A line on a postal card or a letter saying "I am interested in The Gift Club" will bring you an immediate reply from me.

Jean West

Secretary, The Gift Club
FARM AND FIRESIDE, Springfield, Ohio

Another Golden Link for the Family

By Hollister Sage

IT HAS been my privilege during the past months to pore for hours over the records of a man who lived a century and a quarter ago or longer—an honest and happy forebear who looked at life aright. Getting thoroughly imbued with the spirit of those distant days when pounds and pence were used instead of United States money and the shoeing of a horse cost but thirty-seven and one-half cents instead of one dollar and a half as now, is a genuine pleasure.

If any family of to-day would inaugurate such a record book to be written by all members, chronicling events of all kinds as they come to pass day by day, especially a family privileged to live on a farm, it would soon become an affair of the greatest inspiration and animation. Its work as an educational factor would be excellent also, and orthography and system would be learned hand in hand. The blank book should be paged and each page dated, but, still further, each should be inscribed with the name of the person who was to fill that page or write upon it a record, however brief. Father, mother, each of the children and the grandparents now will take their turns. When one whose page has come happens to be away overnight, the next in line may take his place, stating how it is and keeping the record fresh and up to date.

Following such a rule, the book will become of great value as a work of reference in time to come both because of its historic and its bookkeeping features; also because the handwriting of loved ones, sometimes of those who are called above, will be preserved. Improvement in the writing of school-children and their descriptive ability may be noted from month to month.

The keeping of such a record will prove a source of great merriment, will prove to be a family binder, and because all are interested it will not be forgotten, but will be brought forward each evening with some such remark as, "Tom, are your words ready?" or "Ellen now has the opportunity of her life to make herself

famous in placing on file the important events of to-day." Of course younger children will need direction and advice about what to write and Mother will be appealed to many times. Will not such a family diary bind the hearts of all to the old roost? Father will set down when he bought the new harvester, the make and the price; when the colt was sold; to whom and at what price, and will see to it that every page has its right and left corner for figures and balances. The right is to be used for all moneys which flow in, this being the right direction for the family's interest; the left side for money that must needs be left to go the way most money has to go, as a rule. The balancing of the two sides will show whether the business is paying and if the methods followed may be improved. Often the grown-up boy will offer a suggestion that may well set the head of the house to thinking. The volume will make every participant in its authorship a serious financier as he or she realizes how easy it is to dissipate a sum of money and sees where it goes in small amounts.

On the margin of each day's page should be set down the peculiarities of the weather. Thus the date of a blizzard, a deep snow, an uncommon freshet, the breaking up of winter, the first frost of autumn, may be referred to readily and without argument later. The book will tell when the upper meadow was planted with corn and when potatoes were taken from the camp lot, and how many. It will also describe the draining of the swamp, state how many and what kind of tiles were used and the cost, and will contain a carefully made map of the system of drains drawn to scale so that the mains and laterals may be found if desired, without wasting time.

Father will wish to interlard a page occasionally with "How We First Raised Alfalfa," or on "Conclusions About the Improvement of a Dairy Herd After Long Experience." And Mother will enter with red ink when baby John cut his first tooth, or tell the ordeals of "When All Hands Were Ill with Measles." There also will be the chronicle of great events,

with quite a blank space before and after the record, as for instance, "Marriage of Lucinda to John Henry Watrous," with a description of the excitement and preparations, the ceremony, by whom performed and where, and newspaper clippings on the joyous but solemn occasion. Then will come unavoidably also blanks when all hearts are too full to take any interest in the joys of life, and a single line written in a trembling hand, in ink splashed with tears, will speak a volume of sorrow in the words, "Our little lamb, Florence, left us to-day to live with Jesus," or, perhaps, "Grandfather entered this day into the reward of the blessed. He awaits us on the other shore." Instinct with the daily life of every member of the family, and mentioning clearly visitors, great care should be exercised to make every statement so clear, especially where it relates to persons, that the reader a century or more hence will be able to state: "That was my great-grandfather," and feel certain of the correctness of the statement. A well-bound book made of excellent paper should be chosen and the best indelible ink used for all that is transcribed.

Care should be exercised from day to day, by the head of the house, that everything in the book reads clearly, looked at from the viewpoint of unborn generations. For the utility of the record will depend largely upon its comprehensibility in the distant future. Father or Mother, or both together, should act as the secretary or editor of the volume, and whenever necessary should paste in an extra page, upon it referring directly to the affairs mentioned, fully explaining them in the most lucid manner possible. The reader a century or two hence will be most grateful, for this work, besides bringing a daily benediction to the household, will slowly have woven into its fabric that which will make it an invaluable heirloom, beside which the importance of the family plate will sink into insignificance, and coming generations will cross continents and oceans to scan its pages and plead for the right to copy portions of them.



Mrs. Mortgage — "I'm nearly crazy! Our interest is coming due next month, and we won't have enough to meet it. If I had more time to spare, I could make enough butter and egg money to help out."

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ONE YEAR'S TRIAL

Large Meals With a Fireless Cooker

By Ray McIntyre King

THE reason why farm women have been slow to adopt fireless cookery is because manufacturers have not until recently put cookers on the market that could adequately handle cooking for a large family. A small-sized fireless cooker is a nuisance in a farm kitchen. However well it may boil the beans or the cereal, the average woman is not going to fuss with it for one or two occasional dishes and have to resort to the range to get the bulk of the victuals cooked.

A fireless cooker must bake, boil, stew and broil—do all of the cooking. It must be a complete substitute for a big six-holed range, or farm women have no use for it. But at last cookers adequate to meet our heavy demands are being made, and they are proving a real help in cooking.

By careful experiments in my kitchen I have determined these facts about my fireless cooker:

1. The first cost of fireless-cooker equipment is less than the first cost of a range equipment.

The large three-compartment fireless cooker, with full set of aluminum vessels, costs, on the Pacific Coast, about \$30. A two-burner gasoline-stove for heating radiators, etc., costs \$3.50. The cooking capacity of this outfit, costing \$33.50, is equal (except for heating a water-tank, for which a separate water-heater must be installed) to the cooking capacity of my new, latest improved, fuel-saving, six-hole, all-steel range costing \$70.

2. The cost of the cooker maintenance is less.

Best seasoned oak wood costs, with us, \$3.50 per tier. Gasoline costs \$1.25 per five-gallon can. One can of gasoline gives me heat units which, when conserved in the cooker, are equivalent to the heat units (used and wasted) which I am able to obtain from one tier of this oak wood in my steel range. At present prices of fuel one cannot afford to use wood for cooking. The price of coal is even more prohibitive, costing \$15 per ton here in the Sacramento Valley.

3. The fireless cooker economizes on food values. It is the ideal method of cooking. Food values are saved and savors improved by fireless cookery. Evaporation is almost nothing. The meat juices are all preserved. Beans and cereals and other foods requiring long, slow, uniform cooking to render their nutrients

available for digestion are prepared perfectly. The morning cereal cooked overnight comes out a delicious jelly, impossible to obtain by stove cooking. Gingerbreads, fruit-cake, etc., are baked to perfection, with no worry about scorching.

4. The fireless cooker economizes in time—the time of the cook, not the time of cooking, for that is in most cases longer than required by the range and therefore the better for the food values.

It requires no longer to prepare a dish for the cooker than it does for the stove, and once the lid of the cooker is closed, then the cook is free. It makes me soul-sick when I think of the long weary hours we women waste standing over a hot stove watching lest something undercook, or overcook, or the fire go down! Personally, I verily believe that in the last fifteen years alone I have sizzled and perspired up enough good energy to have moved a mountain or two!

Praise be to the fireless cooker! We farm women may now go to the club, or to church, feeling certain the dinner will be hot and "done" when we return. No invention of our times has done more to emancipate women who must cook for many.

5. The fireless-cooker system is cool, peculiarly adapted to summer cooking, when as little heat as possible is desired in the kitchen. This fact must be considered in cold climates and some other provision made for heating the kitchen.

6. The fireless-cooker equipment requires much less space and less labor in cleaning. The average farm kitchen is much too large for comfort and ease in cleaning. By reducing the kitchen space to kitchenette size—that is, to a pantry or closet just large enough to hold the cooker equipment, with table, bins, etc., compactly, and conveniently arranged to save steps—it will be found that the cleaning and heating expense of the kitchen has been correspondingly lessened.

In cold weather the cooker may be used in connection with the dining-room heater. A metal disk (I use a discarded stove-lid) may be heated on the live coals, without the bother of lighting the gasoline.

It is claimed that soapstone disks, or radiators, hold the heat longer and are preferable for heating on the gasoline. I use both metal and soapstone disks, as

occasion requires, and find it pays to have several extra disks, more than the manufacturer puts in the cooker.

The cooker uses conserved heat. If you want a substantial breakfast, put a kettle of parboiled beans and a big loaf of brown bread, or gingerbread, in the cooker at night. Then see the men folks smile at breakfast-time at the delicious meal cooked while the family slept.

All the waste of foods that stick or burn to kettles is eliminated in fireless cookery, unless one insists on heating the disks too long. Even this may be cured by slipping an asbestos mat under the kettle.

Dish-washing is lessened by fireless cookery. The light aluminum vessels are so easily cleaned, and the shallow ones are so slightly that they may be sent direct to the table like the casserole.

Every dietetic value, claimed by paper-bag cookery is also obtained by fireless cookery. Meats roasted, broiled or stewed in the cooker have that fine flavor and tenderness found in the old barbecued meats. The pit in the earth, heated with hot stones or hot ashes, was only the primitive form of the fireless cooker.

Bread baked in the fireless cooker has that thin, crisp, tender crust so next to impossible to obtain in the stove-oven. The moisture retained in the cooker cell prevents the crust from being hard, thick and dry. Oven-baked bread is likely to have either an overdone crust or an underdone crumb, but cooker bread is baked perfectly, both crust and crumb.

Fireless cookery is easy to learn, but, as in every method of cooking, practice brings one nearer to perfection.

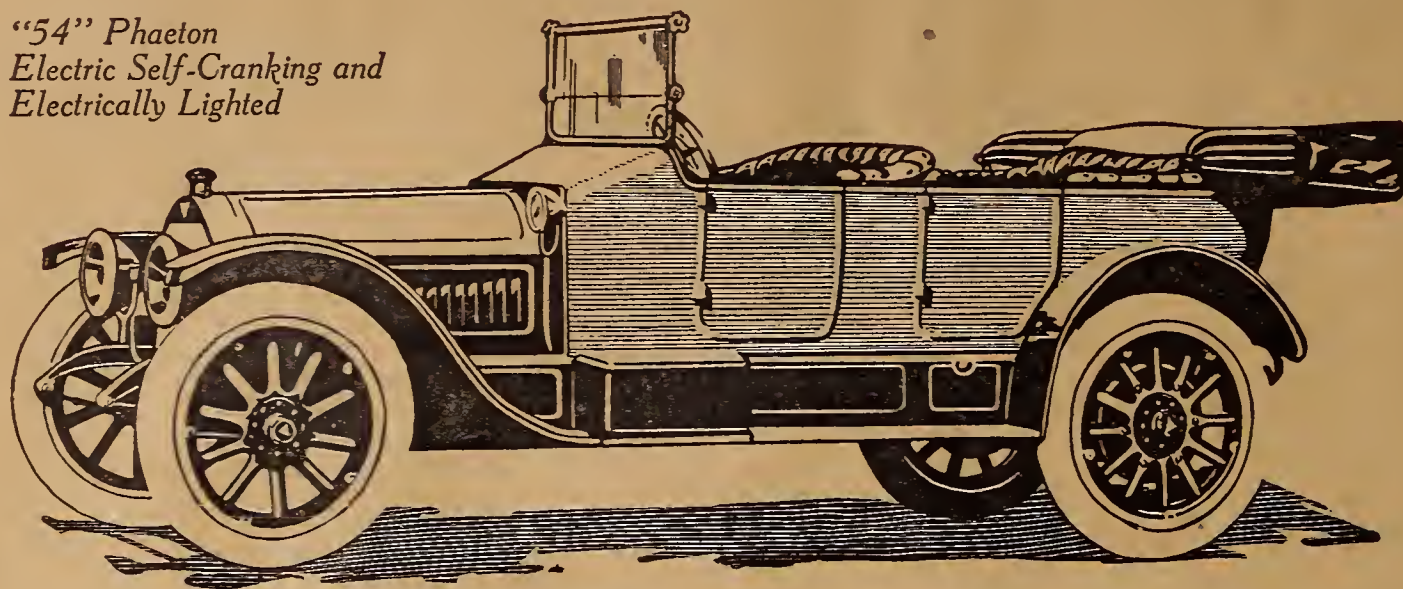
Cooking Sparrows

NOW that the United States Government, through the Department of Agriculture, is suggesting that we eat sparrows, perhaps you would like to see the recipe for cooking them suggested by Uncle Sam in his capacity as chief cook for the Nation.

"Cut off the legs, the wings at the outer joint, and neck close to the body; strip off the skin, beginning at the neck; make a cut through the body wall extending from the neck along the backbone till the ribs are severed, then around between the legs to the tail, and remove the viscera. Sparrows may be cooked by any one of the methods used for reed-birds or quail."

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The choice of *which* car is, of course, important. What it has done, who builds it, the manufacturer's position in the industry and the character of the car itself is not difficult to ascertain.

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He is the point of contact between you and the maker, your relation with him is bound to be more or less personal.

The finest product of the best builders can not be as satisfactory a car for you to own, if its dealer does not display the spirit of interest after you have bought, as it would were the dealer all that he should be. From those who have had dealings with him you can get a pretty accurate line on the dealer.

All who buy HUDSON cars of us have our interest so long as they own a HUDSON. We are more interested in the performance of the car after it is sold, than in the sale itself.

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SATURDAY, APRIL 26, 1913



"Spuds" and Springtime

THE EDITOR'S
BULLETIN OF BETTER
THINGS COMING

Cover Design

Those who are interested in the subject of prohibition will enjoy the cover design of the next issue of FARM AND FIRESIDE. It deals with this serious problem in a unique manner, and solves it without the necessity of written comment.

Special Articles

A few issues back we promised some articles on the Parcel Post. A few letters have appeared from time to time, but in the next issue half a page will be devoted to the experiences of readers in sending farm products through the mails. In an article entitled "Disinfecting Farm Buildings," Doctor Alexander tells what disinfectants are best for various purposes. Disinfectants are much like tools, some are good for one purpose and some for another. Doctor Alexander takes away all the mystery concerning bacteria and diseases by telling just what to do to clean stables and farm buildings and make them perfectly safe after sick animals have been kept in them.

The Headwark Shop

Attention is called to the announcement in this issue of the "Milking-Stool" contest. "We wish to determine what milking-stools are best and why. Prizes will be given successful contestants."

Poultry

The cover of the March 29th issue has caused much comment and has raised many questions concerning the guinea-fowl.

Live Stock and Dairy

John P. Ross, one of FARM AND FIRESIDE'S sheep experts and prominent among sheepmen generally, will tell of the Hampshire Down breed of sheep, which together with veterinary discussion by Doctor Alexander and horse-training contributions by David Buffum will make the coming issues of particular interest to live-stock men.

Garden and Orchard

"Scale Foes of Our Trees" is the title of a valuable contribution by C. M. Weed. Most fruit-growers know in a general way the harm done by scale insects, but do not know how to identify and kill the scale pests.

Crops and Soils

The average intelligent farmer commonly regards sweet and Irish potatoes as belonging to two separate agricultural belts. But Mr. James B. Morman of Maryland tells how both crops can be grown not only in the same soil and climate, but on the same field at the same time.

Marketing

By the time this copy of FARM AND FIRESIDE reaches you, there will have been held in Chicago the First National Conference on Marketing and Farm Credits. FARM AND FIRESIDE will have a representative at this conference, and the boiled-down deliberations of this conference will be given in the marketing department of the next issue.

Fiction

You will be interested in the new story by Annie Hamilton Donnell, which will appear in the next number. As in most of her stories, Mrs. Donnell deals with the simple home life, and shows the things that are most worth while.

Needlework and Fashions

Bags will be as popular as ever this year, and we are going to have a new pattern which our needlewomen will find easy to make. The fashions will include not only the best and the newest patterns, but Miss Gould will give us a page of inexpensive dress materials, suitable for the cool summer dresses that are being prepared now.

Cookery

Nowhere is cookery brought to so high an art as among the Dutch people who spend their lives concocting delicious dishes. We have secured a number of their recipes. Try them.

Sunday Reading

Joseph is still the central figure of the Sunday-school lessons, and the thoughtful reader can learn much from the marvelous story of his life in Egypt.

Children's Page

We are sure our boys and girls will want to read "New Red Riding Hood," which is every bit as "thrilly" as the old one, and it is pretty hard to believe that it all happened in a big city.

WITH THE EDITOR

The Fear
of Sin

I once knew a man who refused to work, though a perfectly industrious fellow. Understand, he was not lazy. He had a good business and was making money. He was a manufacturer. He quit work because he said there was nothing to do without sinning. He was unable to pay his employees quite all they earned, because that policy would take from him all the profits on their work. He thought it a sin to make such profits.

He could not sell goods, because he felt sure the people were not told the full truth about them. He thought of farming, but the bad uses to which many farm crops are put seemed a sin that he could have no part in. About the only thing he could conscientiously do was to peddle books which preached the things in which he believed—and nobody would buy these books. So what happened?

He became a pensioner on friends who did the things his conscience was too tender to endure. He could not support his family, and they became pensioners, also, on people who were not gifted with such piercing insight into the defects, lies and sins of business life—or whose consciences were not so tender.

I have a friend who says that there is an enormous waste of the vital resources of the earth in the growing of 2,175,193,000 pounds per annum of tobacco.

I suppose that he would starve before he would grow a pound of it. But would he grow barley? I once knew a farmer who refused to grow barley for sale, because it might be made into beer. But he did grow rye, wheat and corn, all of which are made into whisky.

Every one of us who grow grapes get more for them because of the enormous demand for this fruit for wine. I suppose the hop-growers among my readers know that they are engaged in the beer business.

Shall we all quit growing wheat, corn, barley, hops and rye, because if we take part in or profit from liquor business we shall sin?

How About
Tobacco

If all the people who are growing tobacco should quit at once and plant corn, the price of corn would go down. I'm perfectly willing—but the point I'm making is, as things now are, that I can't grow corn without making a profit from the tobacco business. The same is true of every crop that could be grown on the land now planted in tobacco. Tobacco removes a lot of competing acres and competing farmers from the field. Removing competition makes bigger prices for me. In a way, every one of us is up against the same thing that drove my friend to doing nothing. We can't escape from complicity, direct or indirect in the work the world is doing.

The Chinese have the opium habit. They need every acre of their land for useful crops; but hundreds of thousands of acres would be planted in poppies for the production of opium if it were not for the activities of the government. And even under the laws forbidding the planting of poppies police officers are often bribed to overlook fields of poppies which grow and mature and produce opium for the use of the poor Chinese smokers of the drug. It must not be forgotten that opium is one of the most valuable of medicines.

There are now thousands and thousands of chests of opium at the Chinese ports, sent there from India for importation while the revolution was going on. The opium-dealers thought that they would be able to send it through the custom houses while the Chinese government was busy with the war. But the revolution was a success, and the opium did not get through. The government of British India is in some way interested in this great store of opium, and there are millions of dollars at stake.

Tea and
Coffee Too

Professor King noticed that in China the use of tobacco is taking the place of the opium as the latter is driven out. He speaks with sorrow and some indignation of the waste of land in tobacco-planting, where land is as precious as it is in China. He is right, I have no doubt.

Nobody can doubt the statement that the opium traffic, for smoking purposes, is an evil. I suppose, too, that few would disagree with the statement that if the Chinese are to smoke the one or the other they had better smoke tobacco. We may say that they ought to smoke neither; but to millions and millions the supply of tobacco seems just as legitimate a need as that of flour. Who shall decide on the matter of a habit? The use of coffee is as universal as that of tobacco. So of tea. Both are narcotics. Neither is a necessity. Caffeine is the active principle of coffee, and theine of tea. They are both as active poisons as nicotine. Who shall say that some time we shall not develop a public sentiment against the use of these? They are certainly a source of waste when we consider the great areas of good land devoted to their cultivation. Is it right to devote the good land of God's earth which He gave to all to the growth of the narcotics which enslave us—tea, coffee, tobacco, opium, alcohol, beer, wine, whisky?

Individual
Standards

Let each man do right as he sees the right. I respect the tender conscience of my friend who quit work, but I don't just see how the world would be able to go on if everybody did as he did. In matters of eating, drinking, wearing and consuming it is just possible that our standards of right and wrong are not infallible.

Let's try to grow good crops of wheat, corn, barley, rye, apples, hops and tobacco, if we are in that business, and withhold censure for those who are interested directly or indirectly in such of these things as we think subject to question.

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Springfield, Ohio, April 26, 1913

PUBLISHED
BI-WEEKLY

Storm, Flood, Disaster, Loss

THE phenomenal storms and floods following on the heels of the spring equinox have probably not been equaled in a generation, in extent of area devastated and loss of life and property. The wrecking of cities, railways, aqueducts, levees, highways and bridges took such a toll of human life that the country was horrified, and property losses in cities alone aggregated scores of millions of dollars.

This calamity reaches much farther in its direful effects than will be realized by many. Popular attention is naturally centered on the large cities that were razed and wrecked by wind and flood; the hundreds of hamlets and towns suffering proportionately get but small consideration from the country generally. Farm losses are even less appreciated.

A rough estimate of the loss of fertile soil and plant-food from erosion and the expense of restoring eroded land to a tillable condition in the score of States more or less affected will make clear that the farmers also were very heavy losers. The torrential rains kept the streams and rivers running yellow, gray and brown for a full week. True, this source of enormous loss of the farmers' best asset—productive soil—is not peculiar to this unusually severe storm period, but this loss has been made more evident to farmers over a wide area at one time than has happened for many years.

The land that was protected with a living cover crop or even filled with the roots and carpeted with the dead growth of a fall-grown crop now stands out as an object lesson that speaks with a force that no farmer of fair perception should be able to escape. As the country grows older and the soil gets poorer in vegetable matter, these dashing, cutting storms become a greater menace, and the only safe plant-food is that locked in the embrace of the roots and tissues of living, dormant or dying plants.

Roast Chicken Dissected

NOT much economic study has thus far been given to the "before" and "after" cooking condition of our common food products in relation to the actual quantity of food left at the last analysis when ready for consumption. It has been found by experiments carried on by the home economics department of the Wisconsin College of Agriculture that a four-pound live chicken will furnish only one pound of edible food when it is ready to serve on the table in the form of roast chicken.

Stated differently, the live chicken that cost nineteen cents a pound, when transformed to the boned, roasted central appetizer of the dinner-table, costs the consumer about seventy-six cents a pound for the edible portion remaining. Of course this seemingly excessive cost can be matched or discounted by other delicacies and tidbits, such as spare-ribs, head cheese, terrapin and frogs' legs.

The figures at first blush look formidable, but the incense of roast chicken fresh from the oven to a hungry diner goes far to convince him that his money has not been misplaced.

Traveling Hospitals for the Country

PROMINENT medical authorities are strongly recommending special hospital trains equipped to afford the best service to rural communities and villages. By this means it is planned to furnish the territory distant from the larger cities with medical service, including surgery, that can now be obtained only by journeying to a city hospital. Of course the hospital trains could not time visits to be in reach when a farmer is gored or tossed by a bull or suffers from machinery accidents. Nevertheless, there are chronic cases now going untreated and much needed surgery which could be cared for by such traveling hospitals.

The need of better facilities for treating cases that require the highest skill and best equipment has of late

years been given frequent consideration in grange and other farmers' meetings. These proposed traveling hospitals will be a direct outgrowth of the discussion given this subject by the progressive thinkers in farmers' organizations which have paved the way for getting the fullest benefit from another needed rural improvement.

Agricultural exhibits will this year be held in twenty-seven different cities in the Cape Province of South Africa, where exceptional interest has developed in agricultural matters.

During 1912 over 150 tons of starch flour, worth from \$50 to \$55 per ton, were shipped to Great Britain from a single county in South Africa. The starch flour was made from sweet potatoes.

Twenty-five million pounds of corn-oil, worth six and one-half cents per pound, were exported in 1911 and 1912. Most of the corn-oil was shipped to northern Europe for the manufacture of soap and lubricants.

The growing tendency to sell farm products in the most concentrated and valuable form is noteworthy. The last census shows that less than one third of the milk produced in Ohio was sold as bulk milk. It was sold either as butter, cream or on the butter-fat basis.



By Parcel Post

By Alice Annette Larkin

THE folks are sending lots of things
To town to Uncle Ned
And Aunt Jeanette and Grandma Smith
And Cousins Jack and Fred.
When Mama says, "Go, bring the scales.
We'll weigh this piece of roast,"
We hurry 'round and get it wrapped
To go by parcel post.

To-day they're fixing up a box
Of eggs they're going to sell,
And Papa says, "Take care! Look out!
Be sure to wrap them well."
They got them from the new hen-house,
There were two dozen, 'most;
They're waiting for the mail-man now
To send by parcel post.

I've heard so much about this way
Of sending things to town;
It's cheap and safe and sure to bring
The cost of living down.
That's what my papa says, and course
He ought to know the most,
About such things, for he's a man,
And uses parcel post.

So I have found the nicest plan,
But you must never tell;
I'm going to send a pail of milk
To town to Grandma Bell.
You see, she hasn't any cow,
And she likes milk the most;
I hope there'll be a lot of it
To send by parcel post.

Washing Soiled Eggs

IN THE February 1st issue of FARM AND FIRESIDE Mr. Fred Grundy discussed the washing of soiled eggs and made a statement to the effect that the cleaning of stained or dirty eggs was impractical. This is the opinion of scientific egg experts also, as well as the experience of commercial egg-men all over the country.

Some of FARM AND FIRESIDE's readers, however, disagree with Mr. Grundy. Here are the opinions of two men telling how eggs can be cleaned:

I have always read Mr. Grundy's articles with much interest, as I think he writes very intelligently, but the advice he gives on washing eggs can be very much improved on. I will give my method of cleaning eggs which I have used for several years. When shipping white eggs to the New York market I clean all soiled eggs (after washing them with water) with either vinegar or a good washing-powder. I used to use vinegar altogether, but have found that a can of commercial cleanser is very handy and will remove all stains and leave the eggs looking just as fresh-laid as ever. I wash my Indian Runner duck eggs in this manner, and they always go to market looking very attractive.

The success of the above method is based on the cleaning power of the acetic acid in the vinegar. Here is another letter which gives a method similar in principle but which takes a longer time:

After reading the article by Mr. Grundy on washing eggs I would like to inform the readers of FARM AND FIRESIDE that all stains can be removed from eggs and still retain their freshness and bloom if covered with buttermilk for twelve hours. Then wash, and wipe dry.

We're glad this matter has come up, for the price on thousands of dozens of eggs will be cut a cent or two a dozen this summer just because the eggs are dirty. We can't afford to sell dirty eggs. Neither can we afford to damage our good names by selling eggs soaked in buttermilk (lactic acid) or sponged with vinegar (acetic acid).

But we can afford clean straw or hay for the nests a little oftener. That seems to be the best solution to the problem.

Are We Wasteful?

THIS is a big country, these United States, and it's full of big men—big mentally, physically and all other ways. We like to do things in a big way. But in spite of the size of the scale on which, as a nation, we operate we also think we're pretty good farm-managers and understand farm economics pretty thoroughly.

Wasteful? Impossible! We raise corn, feed it to steers, let hogs follow the steers, put the corn-free manure back on the land and raise more corn, and so forth. Or, we milk cows, sell the cream or butter, feed the skim-milk or buttermilk to hogs and put the manure from both the cows and the hogs back on the land to raise feed for the next generation of cows and hogs.

But the late F. H. King, of Madison, Wisconsin, who has studied the agriculture of the Orient, thinks we are wasteful. He says of China and Japan:

Almost every foot of land is made to contribute material for food, fuel or fabric. Everything which can be made edible serves as food for man or domestic animals. Whatever cannot be eaten or worn is used for fuel. The wastes of the body, or fuel and of fabric worn beyond other use is taken back to the field.

In Japan there is an average of 3.4 people to the acre of cultivated land, each farmer's household tilling an average of 2.6 acres. He shows that the lands have been worked for three thousand years without any noticeable loss of fertility and contrasts this condition with some of the older farm lands in this country which now yield satisfactory crops only when coaxed to do so with high-priced fertilizers. Rather looks as though the orientals were better farm-managers, doesn't it?

The County Agricultural Adviser

How an Illinois County is Increasing the Efficiency of Its Farming

By George H. Dacy



DEKALB County, Illinois, is one of the first regions in the United States to have an agricultural expert to advise local farmers about the production and marketing of their crops and about modern methods of intensive farming. The movement to secure a farm, soil and crop doctor for the county originated with the farmers themselves. The farmers appreciated that they needed some instruction and counsel regarding the "hows" and "whys" of bumper crop production. Moreover, they wanted to play square with the soil from a fertility standpoint, but they didn't understand how to do it in an economical manner. So they bunched together and held indignation meetings—their anger being directed against their own lack of knowledge.

To get good and mad often does a world of good, and when seven hundred farmers reach the angry condition something is sure to be developed—a local squabble, a political wrangle or a milk-producer's riot. The storm that brewed around DeKalb did not develop so disastrously, as it made for good rather than evil. Its result was the formation of the DeKalb County Soil Improvement Association, whose purpose was to raise funds in order to employ an experienced agriculturist who would assist in solving local farm problems.

Where the Money Came From

Seven hundred of the local farm-owners contributed from \$1 to \$27 per man to a fund for this purpose; the county supervisors voted \$2,000; the Bankers' Association came forward with a generous donation; the county papers boosted for the scheme—with the ultimate result that \$30,000 was raised to pay for the services of a soil and crop expert for three years, and to provide him with an automobile and all the facilities that would increase his efficiency. Prof. W. G. Eckhardt, formerly of the Illinois Agricultural College, was selected as just the man for the place of county adviser, as he had had experience in both practical and scientific agriculture.

On the first day of June, 1912, Professor Eckhardt assumed his new responsibilities. He found work a-plenty awaiting him. Every intelligent farmer in the county wanted the expert to visit him and to explain why his corn did not yield one hundred bushels to the acre, why the corn on one field was backward, what fertilizer should be applied to corn-land, and innumerable other puzzlers of a similar nature.

Mr. Eckhardt mapped out a schedule and planned to visit every farmer who asked for assistance. At the end of the first week his time for the succeeding five months was promised to the large number of farmers in the county who had asked for aid. He worked on the motto of "first come, first served," and called on applicants in the order that they had asked for his aid.

Personal Visits Most Beneficial

Right off the handle Professor Eckhardt ascertained that approximately seventy-five per cent. of the soils in the county were acid and needed generous applications of lime. He constantly carried a soil auger and a package of litmus paper with him on his trips into the country, and continually preached the doctrine of intensive fertilization, the utilization of well-conserved stable manure supplemented by liberal applications of raw rock phosphate and the use of limestone wherever the soil had become sour or acid. Where the soil was sour he said to the farm-owner, "You'll have to buy limestone," and the farmer—at least the progressive ones—purchased the lime and remedied the acidity. One farmer ordered seven car-loads of lime, while in another



"It isn't the seed altogether," he said, "look at those roots"

community ten car-loads of this corrective were purchased by the farmers.

Neighborhood meetings were the order of the day for some time, but soon the farm expert discovered that to really hit the nail squarely on the head in each case he must have a heart-to-heart talk with the individual farmer. A farmer will tell his troubles more freely and listen to advice more kindly if there are not too many of his neighbors about. The man who wishes to have his farm examined notifies the expert and is accorded a date. A week before the appointed time he receives a letter reminding him to be at home, which reminder is later emphasized by a telephone message.

Usually the soil expert spends about half a day on each farm, going over every field and offering advice to their proper management. The regular schedule of farm visits is often interrupted by emergency calls. One day it is a man whose soy-beans have succumbed to a combination of a sour soil, poor inoculation and a surplus of weeds. The next day it is a man who wants to know if it will be necessary to disk his alfalfa ground again, and at what time the seed should be sown.

A Case of Corn-Root Lice

On many occasions the farms that Professor Eckhardt visits outwardly appear to be in A No. 1 condition. Their hog-tight fences, thrifty fields of small grain, corn-fields free from weeds, and buildings in a fine stage of repair made the services of a crop doctor seem superfluous. During a recent visit to just such a place its owner finally said, "The corn in this field is not doing as well as it should. I guess the seed must have been pretty weak." The expert pulled up a hill of the corn and shook the soil from the roots. "It isn't the seed altogether," he said, "look at those roots."

The roots were alive with corn-root lice which had been sapping the strength of the plants. "These lice live on the roots of almost everything except clover," he continued. "However, if you raise clover once every four years you will have no trouble with them. In the meantime, if you will keep your corn ground well stirred from the time spring opens until planting-time, to keep down the weeds and break up the ants' nests, you can pretty nearly do away with the lice."

A Prescription for a Sick Soil

Mr. Eckhardt left the following prescription with this farmer on his departure: "Limestone two tons per acre, to be applied during the fall or winter. Follow in the spring with fourteen pounds of clover-seed to the acre. When the soil is sweetened and the clover has supplied plenty of nitrogen, you should obtain from seventy-five to eighty bushels of corn to the acre from such fine land. Then apply raw rock phosphate in conjunction with well-rotted manure, and before you know it you will be harvesting a hundred-bushel corn-crop." There were also a couple of minor prescriptions—

muriate of potash for a few patches of peat-land and bisulphid of carbon for the skunks that were digging up the meadow.

On the next farm it was a young fellow, a renter, that asked for aid. The farm belonged to his father, who wasn't very enthusiastic about the agricultural expert. "I wanted father to go over the place with us, but he thinks it would be a waste of time," the young man said. "Call him and tell him we are about to start and wish to ask him some questions about the place," the county adviser replied. Soon along came the father just as the expert was pulling out a sample of soil. "Going to dig a well or are you looking for gold?" inquired, the old man.

Clover That Needed Help

"I expect there is more gold in this farm than in some of the Klondike mines if we can only find how to get it out," answered the expert. "I see you use a drill, young man, that's good," he continued. "You drilled the field of oats north and south, too, and have a stand of good clover. Young man, you are on the right track."

On reaching the higher portion of the field and making a litmus-paper test of the soil, Mr. Eckhardt shook his head. "See that clover?" He pointed to the sickly-looking, shriveled clover at his feet. "You'll have to give that clover some help if you want it to make a hay-crop next year. Clover can't stand that," he remarked as he indicated the litmus paper that had been turned red by the acid in the soil. In the neighboring field of corn the crop was poor, although it had been accorded plenty of care and attention. The owner said it was the third consecutive crop of corn that the land had produced.

Silencing a Kicker

"You have done work enough here for an eighty-bushel crop of corn," the soil expert said, "but I doubt if you will realize forty bushels to the acre. Let's see what the trouble is," he went on as he pulled up a stalk of corn. The root system was half eaten off. A little probing brought the offender to light—a white worm about a quarter of an inch long. "That's a corn-root worm," said Professor Eckhardt. "You can't escape him where you are raising corn and corn year after year. Such a stalk can never produce a pound ear of corn."

"I've been farming for forty years, and that is the first time I ever saw any of those things," said the father. "I've often wondered what made the corn look like that, too."

Later on in the afternoon, as Professor Eckhardt was cranking his automobile preparatory to leaving the farm, the boy came to him and said, "I believe you have converted Father. He just told me to find out where we could get some limestone and rock phosphate, and how much it would cost." Such experiences are typical of those that Professor Eckhardt meets with every day. However, the

number of farmers who threaten to "kick the darned crop expert off the farm if they get the chance" is daily growing smaller. One farmer was loud-mouthed in his denunciation of the supervisors for granting \$2,000 to forward the movement to hire a county adviser. Finally one of the supervisors took him to the courthouse and demonstrated to him that the increased taxes against his farm amounted to just forty cents in consequence of the appropriation. After that the "kicker" kept silent.

He Manages the County Farm

Thus far the greater part of Professor Eckhardt's time has been devoted to preaching the doctrine of clover and limestone, as they are needed so badly in DeKalb County. He is also campaigning for alfalfa and soy-beans as well as cow-peas, and urging the farmers to adopt these efficient crops in their rotations, beginning this year.

He is making good with the county farm which has been placed at his disposal for experimental and demonstrational purposes. During the winter season he plans to hold demonstration meetings in the schoolhouses throughout the county, and to attempt to educate the farmer through the medium of lantern-slide lectures and talks on agriculture, with special reference to local conditions. He is also fathering a movement to introduce elementary studies in agriculture and domestic science into all the country schools of the county. In a word, Professor Eckhardt is probably the busiest man in DeKalb County at the present time, and without a doubt he is the one that is accomplishing the most good for the farm and farming in that region.

Every agricultural county in the country could profitably support an agricultural adviser of the caliber of Mr. Eckhardt. At present there are plenty of competent men to fill such positions and to increase the crop yields and the net profits of the farms that will follow their directions. The feature to be emphasized in the DeKalb method of procedure rests in the fact that the farmers themselves felt the need of expert advice, and went about obtaining it. Other farming communities that entertain similar views can undoubtedly do likewise.

EDITOR'S NOTE—Even at this early stage of the work being done by advisory farm experts, evidence is plentiful that the crop doctor must have more, much more than mere, scientific knowledge for his equipment. The qualities of unassuming tactfulness and ability to see farm problems from the angle of observation that appeals to the farmer must make part of an adviser's equipment before he can hope to work effectively for and with the farmers of any community.

The number of men whose training and other qualifications fit them for agricultural advisers will be found to be comparatively few,—much fewer, we believe, than Mr. Dacy so optimistically asserts. However, the demand for this particular kind of counselor is still small.

In many sections where funds are now lacking to help inaugurate the work of farm advisers, there is possible a practical means of keeping those localities in the van of progress. Let the farmers of any such neighborhood unite and procure the occasional services of one of the most successful farmers of that vicinity who is keeping abreast of the times.

Organize a Grange or Farmers' Club and make him lecturer and demonstrator and get his counsel and suggestions at the meetings held regularly at the members' homes. This kind of farm advisory help has proved most helpful in various places and will be found well worth while till the services of the trained expert adviser who devotes all his time to the work can become a reality.



He is probably the busiest man in DeKalb County at the present time and without doubt he is the one who is accomplishing the most good



Silver-Penciled Wyandotte cockerel bred by Mr. Vandervort



Plenty of shade was provided for the flock in planning their yards



One of his pure-bred Silver-Penciled Wyandotte hens

Knowing How with Hens

How to Make a Flock of Three Hundred Hens Net Three Dollars Each

By W. H. Jenkins

WHY does Mr. Vandervort of Delaware County, New York, get a labor income of about \$900 per year for taking care of three hundred hens, or a net profit of three dollars each, when the profit on the average hen in the country is not more than fifty cents? This question I wanted satisfactorily answered by Mr. Vandervort himself, and for that purpose I drove to Pleasant View Farm. I had talked with Mr. Vandervort when meeting him at our Grange meetings, so I knew something about his hen business, but my only way to get real facts and details was to go to the farm. I found Mr. Vandervort busy with the care of a large herd of pure-bred Holsteins, and concluded the poultry business was a side industry on the farm of J. A. Vandervort and Son, of which A. E. Vandervort is the junior partner.

But I was mistaken, for if there is one subject that will induce Mr. Vandervort to leave his farm work to talk it is poultry; in fact, I don't believe he could help talking poultry when the subject is mentioned; he is so full of it he naturally overflows. The whole secret of his unusual success was enthusiasm—love for the work that was not a burden to him, but a recreation, and I told him so.

His Start with Poultry

"Yes," said Mr. Vandervort, as we sat down on a rustic seat in a shady part of the lawn, "when I was a little boy my mother gave me a hen with seventeen chicks; that was my start in the poultry business. I took good care of my chicks, raised them, and increased them each year

until I was the owner of a flock of hens. My love for poultry caused me to read poultry literature until I was not satisfied with anything but pure breeds, and my first investment was a setting of eggs of the best blood of White Leghorns. Later Brown Leghorns, Silver-Penciled, Columbia and Partridge Wyandottes, and Pearl guineas were added to my flock. I keep some guinea fowls; they are good to keep hawks away. I have paid as much as ten dollars for a setting of eggs so as to get eggs from the best strains of a breed."

Utility First; Conformation Second

"What do you value most, egg production or the fancy points and marking that makes fine show birds?" I asked.

"I always place utility first and con-

formation to the standard of fancy points second. I get my breeding stock from yards that have large records for egg production, and try to increase the characteristic by selection as far as practicable. I sell eggs for hatching only about three months, then when the hatching season is over I must sell eggs at market prices, and the safe way is to get as many eggs as possible all the year. It is possible to breed birds which are good layers and still get good conformation to a good standard of points. I get plenty of show birds from my flock."

"Do you sell all your eggs for hatching at good prices during the hatching season?"

"I sell more than 75 per cent. of the eggs from March until June for hatching purposes. I buy the best blood for breeding stock. This is the only way one can get fancy prices." [CONCLUDED ON PAGE 16]

Horse Sense in Raising Hogs

Some Ingenious Arrangements and Sensible Methods Used on a 160-Acre Hog-Farm in Illinois

By W. P. Kirkwood

ABOUT thirty years ago Mr. M. N. Bear, a young man just making his start, purchased a 160-acre farm near Farmington, Illinois, about midway between Peoria and Galesburg. The price he paid for his acres was \$8,500. To-day, reckoning by the standards of recent sales in the vicinity and the condition of the farm, the same acres are estimated to be worth close to \$48,000.

In part this advance is due to a general growth in land values, and in part to improvements in equipment, but in a large measure it is due to a persistent upward trend in the returns obtained. This last, more than anything else, has given Mr. Bear and his farm prominence even in this region of fertile farms, and makes consideration of his methods worth while.

While other farmers near and far were following the old rule of buying more

land to grow more corn to raise more hogs in order to buy more land to grow more corn to raise more hogs, and so on, Mr. Bear was developing for himself the theory that it was good practice to extend one's acres downward.

After doing that, there would be time enough to look after lateral extensions. The consequence is that his acres are more productive to-day than they were when he bought them, more productive than they were ten years ago, in spite of the fact that from year to year he has compelled them to yield larger and larger returns, until he has pushed his annual income up close to the \$6,000 mark.

Hog-raising being his specialty, Mr. Bear, of course, has given much attention to the problem of getting a large average yield of corn, and his experience has satisfied him with a rotation of oats, clover, or clover and timothy, and corn as one of the best for attaining the end desired.

His System of Cropping

With his oats he sows clover or clover and timothy. He almost invariably gets a liberal crop of oats. Sixty acres of oats last year gave an average of seventy-four bushels to the acre. In the fall he

pastures on his clover. The next year he gets a generous crop of hay from the same acres.

Then he plows under his clover, and in the spring puts in corn. In part he feeds his corn from the standing stalks, running temporary fences to confine his hogs to desired areas. His rotation and method of feeding in part from the stalk, coupled with the generous use of barn-yard manures, have not only maintained the fertility of his land, but have increased it.

He Favors a Two-Hundred-Pound Hog for General Marketing

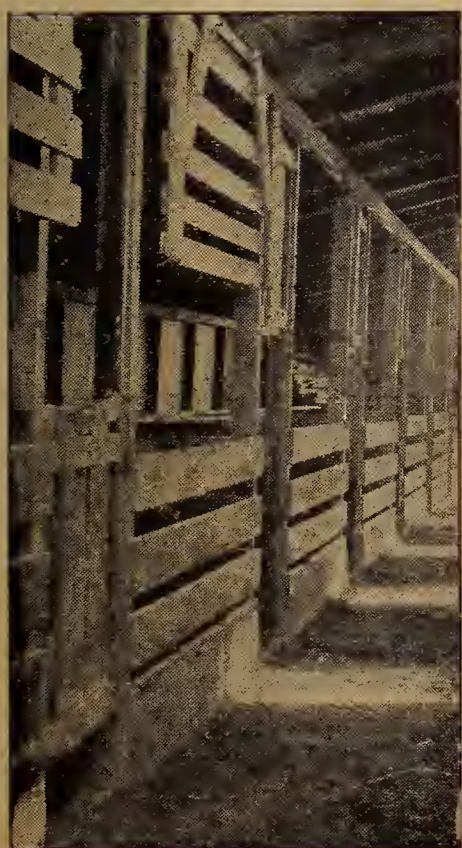
And along with the careful up-keep of fertility has gone close attention to seed selection. Every year as he stores his corn for winter feeding, Mr. Bear selects the best ears for the following season's seed. These he stores away in the furnace-room of his farm home. There, through the winter, the corn becomes very dry and brittle. As a result it germinates almost at once after planting, often giving his corn a good start over that of his neighbors.

When it comes to converting corn into hams, bacon and so on, Mr. Bear is satisfied that it pays better to ship at an aver-

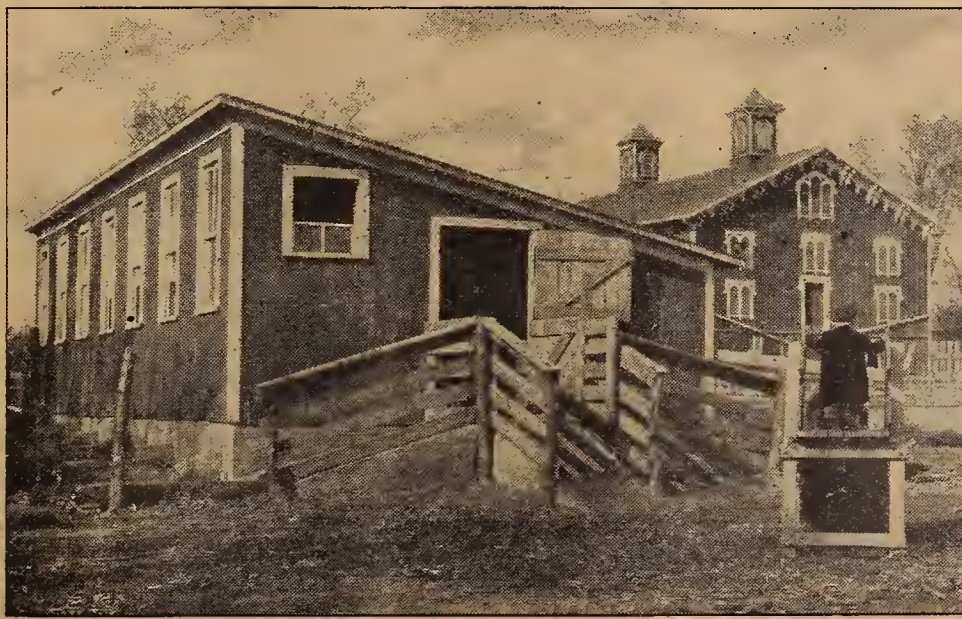
age of two hundred pounds to the hog than later. He says that the first two hundred pounds are obtained at a lower ratio of expense than subsequent additions to weight. Consequently, if the market is right, when he has enough 200-pound hogs to make a car-load, he ships and takes his profit. Of course, if the market is off, and there is reason to believe that it will improve, he accepts the alternative of putting on more weight.

Poland-Chinas are his staple, and he raises two broods a year, one coming late in February or early in March, and the other in September. In so far as he can, he likes to have the litters of each brood arrive within a week, or two weeks at most. This makes for system and ease in handling.

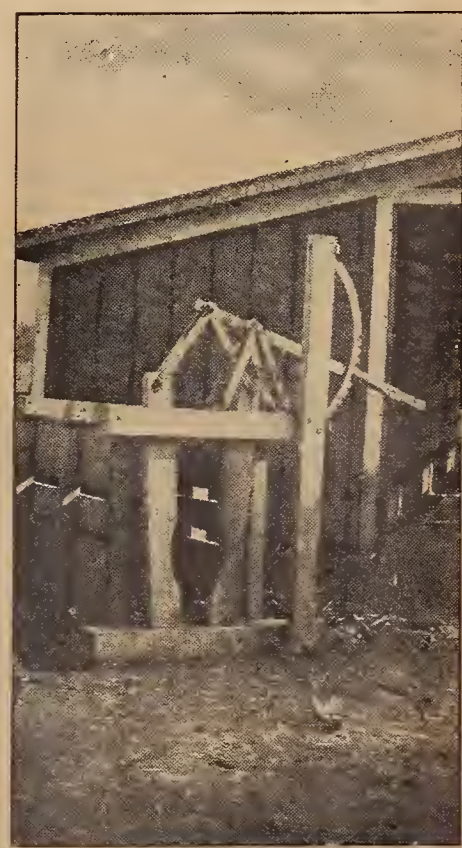
To facilitate the whole business of handling his stock, [CONCLUDED ON PAGE 14]



Interior of hog-house showing the adjustable gates

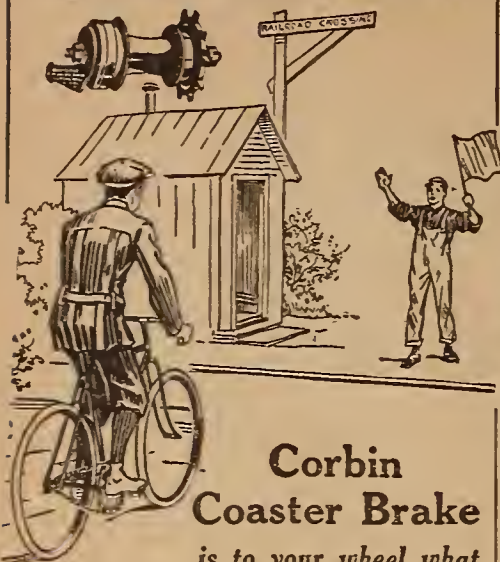


The winter hog-house and gates leading into three separate yards



The hog-trap used in holding hogs when ringing their noses

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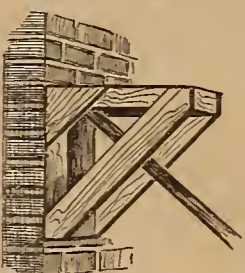


THE sketch shows how to avoid the work and delay of opening and closing large, heavy barn-doors in passing in and out of the barn. It is especially adapted to chore-time. The inside button can be used as a temporary fastening while one is around the barn, though the outside latch, being larger and stronger, is used for fastening the door securely at night or when leaving the barn. A hand hole is provided for reaching the inside button from the outside. One must be sure that the opening is made so the cleats in the large door will act as a jam for the small door, or the swinging of this door will loosen the hinges. M. COVERDELL.

Chisel from a File

TAKE a piece of gas-pipe a trifle smaller than the shoulder of a file and one-half inch larger than the handle. Slip over handle and plug up lower end with dough, then pour in molten babbit metal till full. Bevel the file on a grindstone, and you have a good chisel that will hold the edge. CHAS. VANDENBERGT.

To Make a Scaffold Bracket



TWO scaffold brackets, one of which is illustrated, will be found handy for many purposes on the farm. The brackets are made of two-by-four-inch timber for the top and back side, and one-by-six-inch pieces for the braces on the sides. They are used as shown in the sketch by placing them against the wall, where they are held in place by a pole or piece of timber that will fit inside the braces.

For a scaffold close to the ground two-by-four-inch brace pieces will answer, but for the high scaffolds four-by-four-inch timber should be used. When the two brackets are in place against the wall, place boards on top, and you will have a secure and perfectly safe scaffold to work on when painting, repairing a roof or replacing a piece of siding. ROY CALEMAN.

To Remove Burs from Horse's Tail

A HORSE will get his tail and mane full of burs now and then in spite of all attention. Maybe he will roll and get mats formed that will be quite a task to remove.

To get them out easily, take an oil-can and put some oil on the matted parts. Rub and work these places to make the oil strike through, and the burs will slip out easily. E. P. H. GREGORY.

Anti-Friction Sagless Gate



HERE is an easy-swinging gate that can be made in any length desired and is especially good for the garden or poultry-yard. Take an old buggy axle, and have your blacksmith straighten it and make a square hole (AA) three inches from each end and large enough for a one-half-inch bolt. The square hole will keep the bolt from turning when axle is bolted to the gate.

Dig a round hole one foot in diameter by the post, knock spokes out of an old wheel that fits the axle, and set the hub (B) just deep enough so it will be one inch above the level of the ground. Set axle in the hub as nearly plumb as you can, then remove the axle, and fill the hole with cement (sand, two parts; cement, one part), level with top of ground.

When the cement is hard put the axle back into the hub, using a washer to prevent binding, and have your blacksmith make an iron bracket (D) to support the upper end of the axle vertically.

The axle is then bolted onto a gate constructed as illustrated, using bolts at AA,

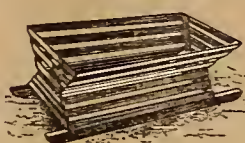
which go through the three-by-four piece. The latch (F), operated by spring (G) attached to lever (E), fits into a mortised block, each side of which is beveled to allow the gate to latch itself. Poultry-wire can be tacked over the gate if desired. T. J. COATE.

Wax Rope to Lengthen Its Life

TO PROLONG the life of cotton rope which is commonly used for plow-lines here in Mississippi and the South generally, rub with a cake of beeswax which has been slightly warmed. The rope should be taut and fastened at each end so enough pressure can be used to work the wax under the surface.

The portion of the line that passes through the rings on the hames should receive an extra good waxing because of the wear it receives there. This treatment will make the lines last three times as long as those untreated. J. O. CLAITOR.

Portable Feed-Rack



HERE is a very handy rack for outside feeding. It may be made any size and for any kind of stock. Being mounted on skids, it may be moved from place to place as the ground about it becomes muddy.

It is simply made, and if one lacks lumber a considerable part of it can be made of poles and small hewn timber. JOSEPH VOLDEN.

Collect Machinery Repair-Parts

DON'T sell your worn-out tools to the junkman. When other farm work is not pressing take them apart, keeping all parts and bolts that may come handy, and then sell all iron not wanted at so much per pound. You will thus realize more than was offered for the whole.

The bolts from a binder may save a trip (or many perhaps) to town.

The web rollers make excellent gate-frame hinges for garden or yard. They can also be used for moving buildings. We moved a twenty-by-twelve-foot building over twenty feet with them. J. E. RAISER.

To Lock a Rolling Door



TAKE an old buggy hub and burn all of the wood out of it, then with a sharp cold-chisel cut the rivets where the spokes join the hub. Now take your chisel, and cut a one-and-one-half-

inch hole on the side you are to use next to the door, and nail the hub securely to the wall next to the door. Nail or staple a piece of trace-chain about one and one-half feet long to the door, run the chain through the hole you have cut in the hub, and fasten your lock on it. Push your lock back in the hub, and you have it out of the rain and snow. C. W. GRAY.

Wheel Used to Stretch Wire

TAKE any farm-wagon, and back it against a tree, if on the line of the proposed fence; if not, set a good stout post in solid, and back wagon against the post, having one rear wheel in line with the face of the post. Raise the wheel, and place a jack under it so the wheel turns freely. Fasten one end of the wire around a spoke close to hub, then unroll wire to the other end of the fence, and fasten with a staple. Now turn the wheel until the wire is as tight as is desired, and staple it fast. Proceed in same manner with each wire until all are fastened. Any length can be stretched by this method if the ground is level, or nearly so, and can be made as tight as you wish it. The leverage is so great that one must be careful not to break the wire. S. E. RHINE.

Headwork Winner—April Twelfth

The first-prize contribution in the Headwork Shop, in the April 12th issue, was "Mice by the Sack," by Ella R. Wiley

What is Your Favorite Milking-Stool?

FARM AND FIRESIDE wishes to collect information which will lead to the publication of the best milking-stools used by our readers. All dairymen are therefore invited to write the Editor of the Headwork Shop a short letter not exceeding two hundred words, accompanied by a sketch of their favorite stool. Give reasons for your choice and the special advantages of the stool preferred.

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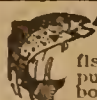
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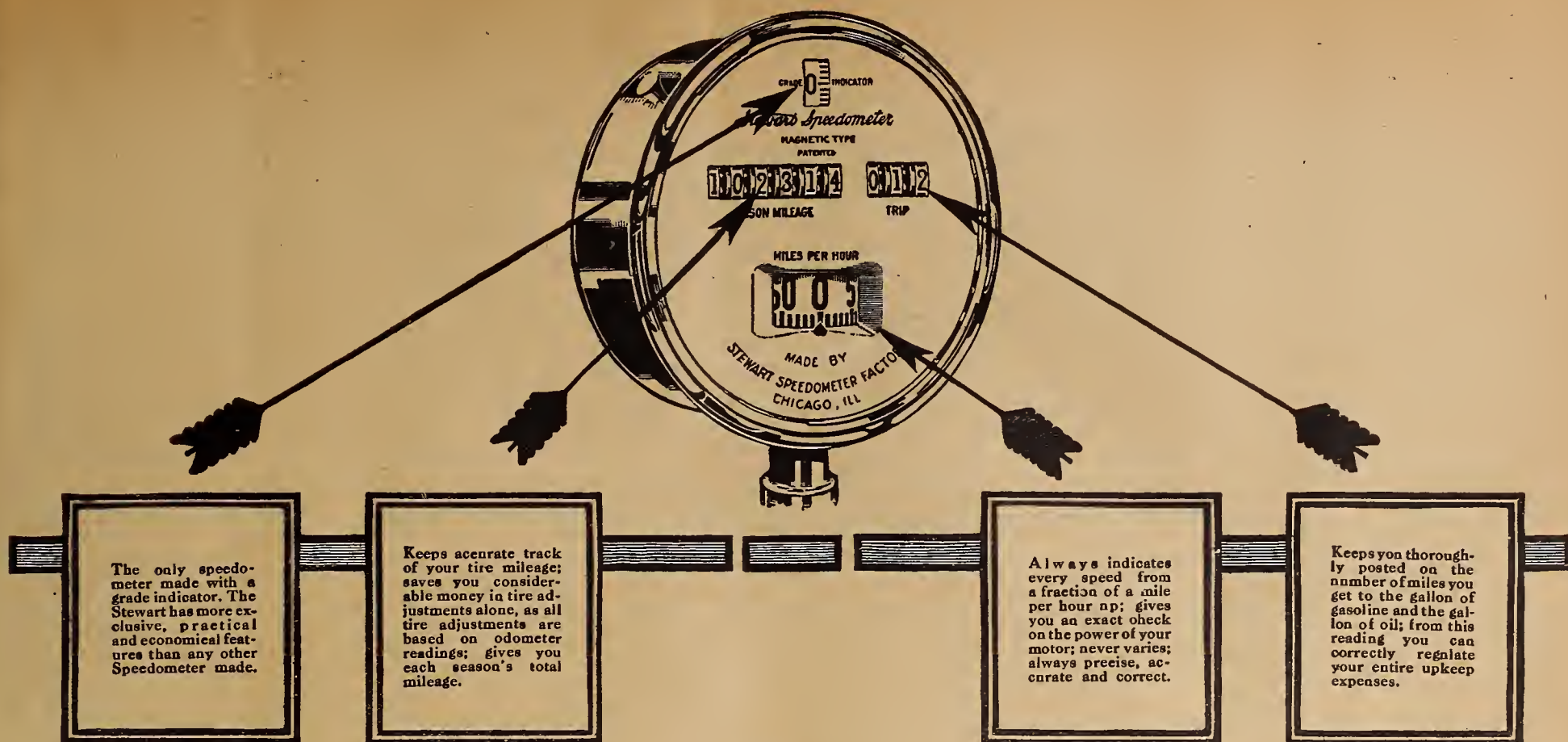
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Farm Notes

The Cycle of a Gas-Engine

By James A. King

This is the Fifth of a Series of Short Articles on the Gas-Engine

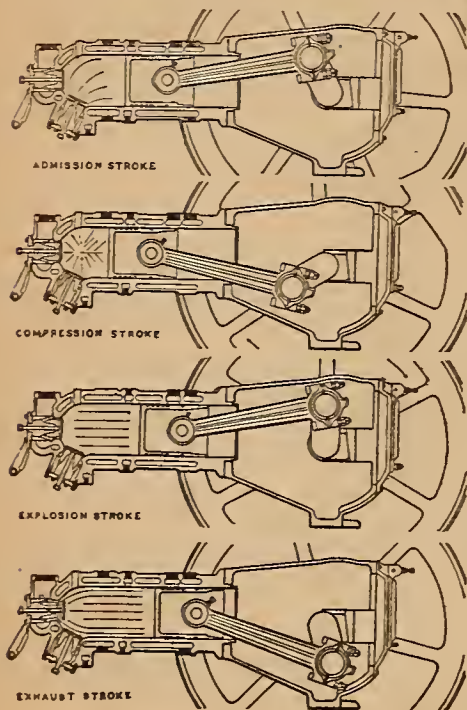
A CYCLE is simply a complete operation which is repeated. So the cycle of a gas-engine is the complete process of taking in a charge of fuel, exploding it and driving it out ready for another charge. On this basis they are divided into what are generally called the two-cycle and the four-cycle engines.

The most correct way is to say the two-stroke cycle and the four-stroke cycle. But the American people are very strong on saving words except in politics. So we will continue to use these shorter and more common names, though they are not exactly correct.

The Difference Between a Two-Cycle and a Four-Cycle Engine

In the four-cycle engine four strokes, or movements, of the piston are required to complete the cycle. In the two-cycle engine there are only two. There are two strokes of the piston for each revolution of the crank-shaft. So that there is one explosion every second revolution of the crank-shaft in a single-cylinder four-cycle engine and one every revolution in a single-cylinder two-cycle engine.

The accompanying drawings will help to explain and illustrate more fully the various parts of a four-stroke cycle. These drawings are just as though we had cut right through a single-cylinder engine from one end to the other, just like splitting open a watermelon with a knife. In the closed end,



The four-stroke cycle

or head, of the cylinder are two valves. The fresh charge goes into the cylinder through the admission valve. The old burned gases go out of the cylinder through the exhaust valves.

The first drawing shows the piston part way out on the suction, or admission, stroke. As the piston moves outward from the cylinder-head, a sort of vacuum is made at its head. When the admission valve is opened, the charge of fuel and air rushes in from the carburetor to fill up this vacuum. The action is just the same as that by which we used to fill our squirt-guns with water.

The second drawing shows the piston just before ending the compression stroke. The valves are both held firmly closed. As the piston comes back on this stroke, it forces all the gases up into the cylinder-head and compresses them. The smaller the space it is compressed into, the higher its compression and the quicker it will burn, the hotter it will get when it does burn, and the more instantaneous—and consequently the more powerful—will be the explosion. Compressing the charge causes it to heat, so the limit to which it can be compressed is that pressure which produces spontaneous combustion. So that the ordinary gas-engine compresses its charge into only about one third its natural volume.

The third drawing shows the piston going out on the explosion stroke. The burning of the fuel at the beginning of this stroke raises the temperature of the gases in the cylinder and so causes them to expand. Since the valves are still held closed, the gases can expand only by forcing the piston out to the other end of the cylinder. This explosion stroke is the only one in which the piston does work on the crank-shaft, so it is also called the working stroke.

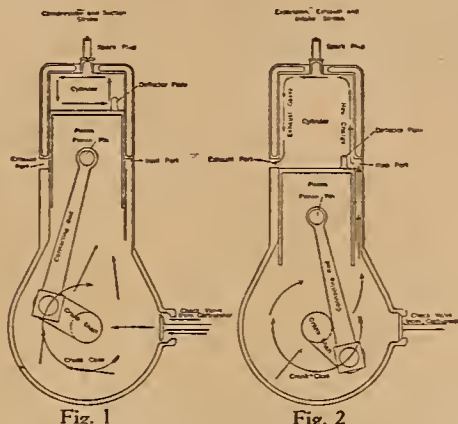
The fourth drawing shows the piston returning on the fourth and last stroke of the cycle. The exhaust valve has been forced open mechanically, and the piston forces all the hot, burned gases out through it. When the piston reaches the inner end

of this stroke, the exhaust valve closes, and the cycle is ended. As it moves out again it begins the suction, or the admission, stroke of the next cycle.

The Need of a Heavy Flywheel

When a four-cycle engine is started, it is necessary to turn it through the first two strokes of this cycle by hand or some other mechanical means. Then the explosion in the third stroke gives sufficient impulse to the crank-shaft and the flywheel to carry it on over through the exhaust stroke of that first cycle and the first and second strokes of the succeeding cycle until the next explosion takes place.

So there is only one stroke out of the four in which the piston gives force to the crank-shaft. During the other three it is receiving force from the shaft. Thus, one easily sees the need of having a large heavy flywheel mounted on the shaft. During the working stroke the flywheel absorbs and stores up the energy or force that is given out by the piston from the explosion that takes place behind it. Then in the other three strokes



The two-stroke cycle

it gives out this force to the piston to keep it moving, and to the belt pulley or the gear system to keep the engine doing its work with a smooth and uniform speed. If it were not for the action of this flywheel, the explosion stroke would be a very fast one, the exhaust and suction strokes considerably slower and the compression stroke very much slower. So that each cycle would consist of a powerful jerk followed by a slowing down. This action would soon ruin the engine and the machinery which it was driving.

The two-stroke cycle is more complicated than is the four. This is because there are two things going on at one and the same time. It is necessary to have a compression chamber separate from the explosion chamber and cylinder proper. This compression chamber is arranged in several different ways. But we will consider here the more common one using the crank-case.

Figs. 1 and 2 will help to illustrate and explain this two-stroke cycle. They show the engine after it has been started up and is working naturally. It will be noticed that on opposite sides of the cylinder there are two ports which are alternately covered and uncovered by the piston as it travels back and forth. One of these, the inlet port, is connected by a passage with the crank-case. The other, or the exhaust port, leads directly into the open air. A check valve opens from the carburetor into the crank-case. And of course the crank-case is air-tight.

Fig. 1 shows the piston going up on its compression stroke and compressing the charge which had been previously admitted to the combustion chamber. Since the crank-case is air-tight, this tends to produce a vacuum in the crank-case. But in order to prevent this the check valve from the carburetor opens at this time and admits a charge of fuel to be drawn into the crank-case. When the piston reaches the upper end of its compression stroke, explosion takes place.

Fig. 2 shows the piston at the outer end of its explosion stroke. Just before reaching the outer end of this stroke the piston uncovers the exhaust port. As a result, a large share of these exhaust gases rushes out through this port. As the piston comes down on the explosion stroke, the check valve between carburetor and crank-case is closed, and so the piston compresses the charge in the crank-case.

Just after uncovering the exhaust port the piston uncovers the inlet port. The outrush of the burned gases has lowered the pressure in the cylinder. So when the inlet port is uncovered the compressed charge rushes from the crank-case through the inlet port into the cylinder.

The Value of the Deflector Plate

Mounted on the head of the piston, and directly in front of the inlet port when it is open, is what is called a deflector plate. This causes the inrushing charge to be thrown up along the side of the cylinder toward its head and prevents the charge from rushing across the head of the piston and out at the exhaust port. On the contrary, it flows up along the side of the cylinder, across its head and down the other side, driving the old burned gases ahead of the charge and forcing them out through the exhaust port.

Then as the piston starts upward again on the next cycle it covers first the inlet port,

then the exhaust port. It compresses the charge that is in the cylinder and sucks another into the crank-case. So that one stroke of the cycle might be called the suction and compression stroke, while the other might be called the expansion, exhaust and inlet stroke.

Each type of cycle has its own advantages and disadvantages. Each has its strong adherents, its staunch friends and bitter enemies in the manufacturing world.

The Advantages of Each

The four-cycle has this very decided advantage: There is only one thing going on during any one of the strokes of the cycle. If something goes wrong with an engine, one can turn it slowly through a complete cycle and determine in which stroke the fault is located.

But in the two-cycle engine there are two or three things going on at the same time during each stroke. If something goes wrong with either of them, there is a good deal of guess-work about which it is. So that it is generally more difficult to locate the trouble in a two-cycle than in a four-cycle engine.

But on the other hand the two-cycle is much more simple in its construction. Its valves are ports which are simply covered and uncovered by the motion of the piston. It is not necessary to have valve levers, springs, timing gears, and so on, to control the opening and the closing of the valves, as it is in the four-cycle.

In the two-cycle the explosions are just twice as frequent as they are in the four-cycle, and so an engine does not need to be nearly so large or so heavy in order to deliver any certain amount of power.

These are only some of the major differences which exist between the two general types. Certain specific examples of each type will show these advantages or disadvantages enlarged or decreased because of special features which they may possess.

Dirt-Fakers

By Robert M. McCabe

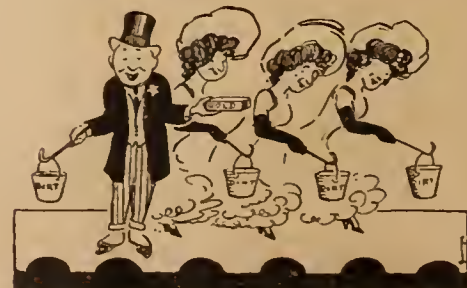


MOST towns that have ambition to change their spelling to c-i-t-y are 47½ per cent. real-estate fakers, 25 per cent. prospects for real-estate fakers, and the uncounted 37½ per cent. just folks, a portion of which are honest real-estate handlers. There are just as many different kinds of real-estate fakers as there are champion wrestlers in the small-town field, for when a man tries publishing a newspaper, teaching school, peddling farm machinery, taking orders for lightning-rods, selling fruit-trees, counting eggs in the corner grocery, barbering, going short on a potato speculation and teaching scientific farming by mail, and falls down on every assignment, no wonder he takes a flier in real-estate contortion and comes through with an average of 98½ per cent.

It has been decided after many decades of scientific research that the most successful entries in the field of dirt-faking are those that have had previous experience in peddling gold bricks, dispensing electric belts or handling Indian cure-alls, although history teaches us that some adept in mine-planting frequently gets a pure-reading position on a preferred page in Dun & Bradstreet.

This is not to be taken as applying to all men who eke out an existence selling for \$40 an acre land that they had to get at least \$6.50 for to make a profit, and on which they had put up an option totaling \$7.50, fifty cents of which was real money.

There are some mighty fine men who do a little real-estate faking now and then—but there also are some fine men who don't. Even J. P. Morgan sold a little real estate occasionally. He would release his stranglehold on a small hock at \$75,000 a front foot, provided of course that his profit on every twelve inches were \$74,000. John D. Rockefeller also has been known to dabble a little bit in land values, and No. 786, the gentleman in a striped wool suit, with closely cropped hair, who occupies cell No. 42, also did a little dealing in the Simon-pure brand of real-estate faking a few months back.



He joyfully chants a tuneful melody

Even the most ardent opponent to the talented dirt-and-dollar mixer has to give it to the party in a frock coat and striped trousers, a high hat and passionate vest, a gold-headed stick and a four-carat flasher decorating his vivid shirt face, who can make the ordinarily keen business man untighten at the rate of \$8 an acre for about 12,000 acres of land which if it felt a few drops of real rain water on it would become so swelled up that a realistic imitation of Mt. Vesuvius after a heavy meal of lobster salad and dill pickles would result.

It takes a real genius to make an Iowa farmer think he ought to sell the acres on which he has raised everything from peaches to triplets, and move out where the sun shines twenty-two hours every day at an average speed of 99½ degrees, and try to raise alfalfa and orange-blossoms on land that long before caused the dyspepsia-proof sage-brush to give up the battle with the high cost of living. But they have just that kind of genius in the land-faking line, and the right kind of well-developed conversation-distributor can make the hack-to-the-land devotee believe he can grow anything from blue apples to canned shrimp on a rock in the middle of the Alamogordo desert, provided he irrigates, and irrigating the Alamogordo is a cinch—when it is done in a real-estate office in Ohio.

What the Dirt-Fakers Teach Us

The highly tuned faker with a lot of sand and cacti he might sell and with a live prospect listening can unwind music that would make the three Sirens of mythical days look like forty-nine-year-old chorus ladies trying to start in the Elsie Janis class, for when the cash is near and the going is good he joyfully chants a tuneful melody to the effect:

"Here's a beautiful farm in Timhuctoo, there's a thousand acres in it; if you want to farm that's the place for you, and now's the time to begin it; perhaps it once was a desert wild, no crops but sage and sand; but now, to make it very mild, it's seventy-dollar land. Maybe you'll have to irrigate, and thus get water to it; but the cost will not be very great—and say, why don't you do it? You can raise string-beans and lobsters too, and turtle-eggs and fish, and cole-slaw, pickles, Irish stew—oh, every sort o' dish. He sells the farm for ten thousand yen, then beats it home to town, and the fellow who got it don't know when he got done quite so brown."

Which teaches us that it is better to have ten turnips from forty acres than it is to have 40,000 acres without a turnip in the cellar.

Value of Baled Fodder

By C. J. Griffing

FOR the last few years hay has been so high priced that it did not pay us to feed it. We made more money by selling it and looking to some cheaper food for the wintering of our stock. The best substitute for hay is corn-fodder, and we are beginning to appreciate its value more and more every year. Corn-fodder brings but little upon the market, but is a good substitute for hay in home feeding.

One objection to feeding fodder is that it is clumsy to handle unless shredded and so bulky that it is hard to find an inside place to store it. Feeding from outside stacks is disagreeable work in cold, stormy weather. Fully one third of the value of the corn crop lies in the feeding value of the fodder, and if this is allowed to remain out in the weather twenty per cent. of its value is lost.

Baling the fodder makes its feeding better in many respects. It solves the storage problem, as the baled fodder takes up much less room than loose fodder. It is convenient to feed also, as the baling process breaks the stalks into short hits, thus rendering it more easily handled. With a good amount of baled or shredded fodder on hand and a filled silo, a farmer is safe in parting with a large proportion of his hay when prices are as high as they have been the last few years.

On the other hand, if fodder is to be sold it can be moved more readily and sold quicker at a better price if baled. Fodder can be baled direct from the shock so that there is no waste of labor in the process.

Give the Engine Firm Footing

By George W. Brown

WE SEE many gasoline engines being used upon the farm where much of the efficiency in power is being wasted because the power plant is mounted on a poorly constructed base.

The pulling power of a motor depends largely upon its firmness of construction, and a good engine can easily lose one half its power efficiency on a poorly built base.

All good farm engines are now built with a heavy cast base, or box base, holding the engine parts in perfect alignment, bracing the power plant in every direction, and forming as well a receptacle for collecting waste oils and grease.

Whenever the engine is mounted for use either on a truck or permanent base, a heavy timber base or a concrete base should be supplied.

The experienced mechanic who is interested in the successful working of an engine invariably advises a concrete base in which heavy bolts have been imbedded for fastening the motor securely, thus removing all vibrations and adding to its efficiency.

Fight Weeds Before Planting Them

By Wm. J. Cooper

WEEDS are very expensive, and there is no better time to fight them than right now. This may sound like a peculiar statement, but when I say fight them with your fanning-mill you will begin to understand.

I have known farmers who sowed their oats year after year without ever cleaning them, and then wondered where the yellow dock and other weeds all came from. If you wish to see just what there is in your oats in the way of weed-seeds, put in a screen just large enough so that the oats will not pass through the mesh. Now run a bushel or two of oats through the mill, and see what you find in your screen-box. It is the same with barley and other small grains. Beans are a staple crop in many sections, and are usually sowed with a common grain drill. While they are the easiest of all grains to separate the weed-seeds from, where they are left in they will do more harm than in other crops, as they come up in the row where the cultivator teeth cannot get them.

Clover-seed is a particularly hard seed to clean, as it has to be cleaned very slowly in order to do a good job and not blow over all the seed. The separation is very difficult because the seeds are small and of one size, requiring often to be run through the mill several times before the seed is right.

Starting Asters Outdoors

By C. M. Weed

ONE is generally advised to start seedlings of China asters indoors, in window-gardens, hotbeds or greenhouses. Many people who do not care to take this trouble buy their plants in May from the florist.

The China aster does better, however, when the seed is sown outdoors. It is naturally a September flower and is most beautiful at that season. If the seed is sown in the garden in May the young plants will be ready to transplant in June and will be stronger and better than if started under glass. They will blossom also at a more seasonable time.

This being the case, everyone should have an abundant supply of these attractive flowers. The Comet, Crego, Mikado and Branching asters are among the most attractive sorts.

My Auto Truck

By C. R. Bashore

FOR several years I have been considering the idea of getting an auto truck to go to market, as I have a sixteen-mile drive. When I was hauling potatoes to market, it took me about eight hours going and coming with my three horses to a large top spring wagon. Last summer, when I saw so many auto trucks in the city, I thought "Surely that's the thing for me," and finally, after deep consideration, I purchased a ton truck of the high-wheeled kind.

I have used it now for several months, and I am delighted with it. It gives satisfaction beyond my expectations. So far I have used it quite freely for conveying peo-

are doing, see the scenery and get back the same day without having tired horses. On Sunday morning we can sleep an hour longer than we could when we had to get horses ready to hitch up to go to church. After the services we are home half an hour sooner than with horses.

The expenses of running are not large, gasoline being the greatest factor. About ten gallons are required for fifty miles when I have a load. It is an air-cooled engine, which I prefer to a water-cooled engine. You save a lot of bother with water, especially in winter. The transmission is of the planetary type.

I have two speeds forward and one reverse. The tires are puncture-proof, as they are solid rubber. The box is six feet long behind the seat and forty-four inches wide, with six-inch flare boards on top. I purchased the truck without a top and got the top made at home for twenty-five dollars. I usually have from seven to nine horses, but now I can do with two less, as none are needed on the road.

EDITOR'S NOTE—What Mr. Bashore has said of his auto truck is doubtless true of a new machine, but in time the cost of repairs and the occasional overhauling necessary would add considerably to the cost of upkeep.

It is only fair to you, your neighbor, and the friendship that should exist between you, that all division fences around the pastures be in first-class repair before you turn the stock to grass.

If a farmer actually has a place of business worthy the name, and produces anything that really is fit for sale, why should he not have neat letter-heads and return envelopes printed in a manner that will strikingly convey these facts.

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Harmonious Beauty and Permanent Protection are Combined in Cyclone Cemetery Fence and Entrance Arches.

Special prices to Churches and Cemetery Ass'n's. Placed around the community burying ground they are an expression of remembrance and devotion by the living and give the last resting place of loved ones a well-kept appearance.

Built to last, of heavy galvanized wire, in various ornamental patterns. Are cheaper than wood and much more ornamental. Designed for public parks and private grounds.

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In 1918—What?

By R. E. Olds, Designer

Many a car will run well for one summer. But in five years from now where will flimsy cars be? And what will they cost in the meantime?

"Dear Mr. Olds: I have run one of your cars for 75,000 miles, and it still runs as well as any new car I know."

That's from one of the letters which come to me constantly.

And legions of men saying such things to others give to my cars the place they hold after 26 years of car building.

It Isn't Easy

It isn't easy in these days of fierce competition to build a really honest car. In Reo the Fifth it means \$200 more than such a car need cost.

And nearly all that extra cost is hidden. It is years, sometimes, before users learn its meaning.

Note what it means to the maker. He must have all steel made to formula. To make sure

of its strength he must analyze it twice.

Each driving part must be given all the strength it needs, then 50 per cent extra strength must be added.

He must use big tires—we use 34x4—to cut down tire upkeep. He must use roller bearings—we use 15—where common ball bearings cost one-fifth as much.

To escape all flaws he must use drop forgings. We use 190. He must use a \$75 magneto—a doubly-heated carburetor—big brake drums, big springs.

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And he must have scores of inspectors and testers watching every part of that car.

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To the user it means an almost trouble-proof car. A car with low cost of upkeep. A car that meets every strain.

A car that continues, year after year, to render perfect service. And a car that saves hundreds of

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You get this all in Reo the Fifth, and countless users know it. And you get it at an underprice. For all this extra cost is saved by our wonderful factory efficiency.

We save 20 per cent in one way alone—by building a single model. Every machine and tool in this factory is adapted to this one car.

And we make all our own parts. That's how a car such as I describe can be sold at the Reo price.

New Control

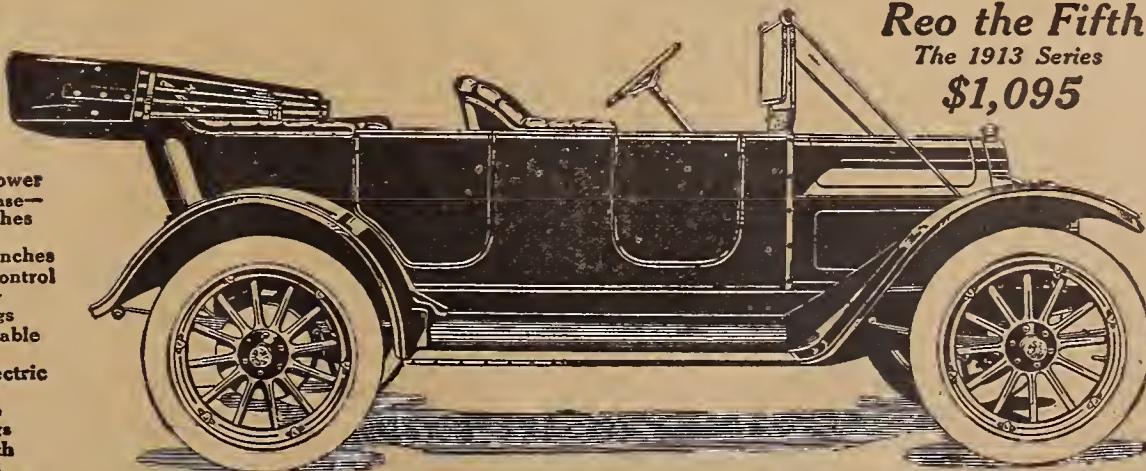
This car has our new control. All the gear shifting is done by one center rod, entirely out of the way. It is done by moving this rod only three inches in each of four directions.

There are no levers to clog the way of the driver. Both brakes are operated by foot pedals. And this car, like all the leading cars, has the left side drive.

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The 1913 Series
\$1,095



30-35 Horsepower
Wheel Base—112 inches
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Made with 5 and 2 Passenger Bodies

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My average speed is about ten miles an hour

ple to distant places. The seating capacity is twelve persons, but have had thirteen adult passengers in it for a forty-mile drive. I make an average speed of about ten miles an hour, and so far everybody who was in it enjoyed it very much. For a trip of twenty miles distance—forty miles both ways—I usually get \$1 to \$1.25 per head. I had \$3 per head (eleven passengers) for the longest trip I have made, which was sixty miles one way. This trip I made in a little over six hours.

Two Less Horses Needed

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the Thing!"

The
1913

Indian Motorcycle

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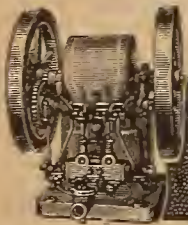
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While you are giving the team a little breathing spell, light up a pipeful of rich, fragrant Velvet—the smoothest tobacco.

It's mighty fine! The best tobacco you ever tasted.

And here is why it is so good. Velvet is made of the choicest Burley leaf—the best pipe tobacco that grows. Only the tender, ripe middle leaves are used, and these are aged and aged until not a bit of bite remains. Then it's packed in a moisture-proof tin that keeps it good.

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Garden and Orchard

Where Strawberries are Nuggets

By George H. Dacy



ONE of the largest strawberry centers in the world is southwestern Missouri. It annually ships out hundreds of car-loads of this fruit which commands a top price on the markets. This region became prominent in berry culture on account of its favorable climate, its accessibility to central markets and its fertile soils, on which the strawberries mature into large-sized fruit.

Even with these favorable natural conditions the berry industry of the Ozark fruit belt would have never attained its existent prominence were it not for the organization of a co-operative marketing society which rendered possible the shipping of a product of uniform type and quality to the best markets and in consequence of obtaining for it the highest prices.

An Average of \$2.50 per Crate

Last year the members of the Ozark Fruit-Growers' Association received an average price of \$2.50 per crate for their berries, whereas the independent producer the country over was glad to market his fruit at \$1.50 to \$1.75 per crate. This extra high price paid for the Association berries was on account of this fruit being of a uniformly superior quality and also because it was so carefully sorted and graded.

The stamp of the Association on a box of fruit was a guarantee of its excellence. At present there are approximately one thousand Missouri strawberry-growers, who are annually producing something like eight thousand acres of berries, and who are marketing their fruit under the direction of the Association.

The average producer raises from five to ten acres of strawberries each year, in many cases he is a general farmer, poultryman or orchardist who grows the berries merely because they constitute an excellent cash crop to be produced as a side-line. Practically all the soil upon which these berries are produced is of a loose or sandy loam origin. These soils, in the main, are virgin in nature, being in cut-over areas and accordingly especially rich in humus. The berries are grown on a given piece of land only once every five or six years, other crops being used in rotation.

In some cases it is necessary to apply phosphoric acid to the strawberry soil in the form of raw rock phosphate or bone-meal after the first crop is produced, but, aside from this and the use of well-rotted stable manure, no resort has to be made to artificial fertilization. In case the land is not stony, it is necessary to mulch the crop with wheat-straw in order to conserve soil moisture and to insure vigorous and rapid growth of the young strawberry plants.

Stones as a Useful Mulch

Peculiar as it may seem, the stones and small rocks which are so prevalent in the Ozark districts are beneficial, in that they rapidly absorb heat and radiate it to the soil, while in a similar manner they conserve soil moisture by preventing wasteful surface evaporation, as they form a protective covering over the land. Of course if the stones are extremely numerous they are detrimental to strawberry culture, but where care is used in selecting the berry site this condition rarely occurs.

Throughout this berry belt the profits obtained annually by the growers are very attractive, the average range being a gross return of from \$100 to \$300 per acre. A man can gain a pleasant and profitable livelihood from his \$100 per acre crop, as the cost of production is not at all exorbitant in the case of the berry crop. There is a notable example of one experienced grower who recently conducted an experiment on his home berry-patch to ascertain just how large a profit it was possible to obtain per acre.

This producer used the best and most vigorous of plants for his sets and started them in a well-prepared seed-bed of excel-

lent condition and tilth. His soil was rich in plant-food elements in consequence of generous applications of bone-meal and carefully conserved and thoroughly rotted manure. He protected his seedlings from the ravages of insect pests by intensive spraying and the use of poison baits, so that the crop matured to a bountiful luxuriance productive of large, uniformly shaped, luscious berries.

This fruit-grower kept accurate account of the expenses involved in the production of his crop, as well as the income from the sale of the berries which were marketed under the direction of the Fruit-Growers' Association. At the end of the season when he figured out his net return from the strawberries he found that his profit amounted to \$1,000 per acre, his gross income being \$1,400 per acre.

Eight Hundred Crates per Acre

He had successfully raised eight hundred crates of berries per one hundred and sixty square rods of area, and this fruit had sold for \$1.75 per crate. If the price obtained for the berries had been as high as that recently received, namely \$2.50 per crate, his gross return per acre would have been \$2,000. There are many other cases of growers who have gained a net income of \$300 to \$500 per acre, returns which, although not nearly so striking as the foregoing result, nevertheless indicate the wonderful possibilities of berry culture in the Ozarks where painstaking management is practiced in the production and marketing of high-class berries.

Of course the fundamental key to the success of the Ozark strawberry belt is the efficient marketing organization which combines all the producers and enables them to place on the market a product of uniform excellence. During a full year one thousand car-loads of strawberries are not uncommonly shipped out from this district. There is one small town in the strawberry belt that has shipped thirty car-loads of berries a day and in excess of three hundred car-loads during the season.



The high cost of living might be reduced considerably by reducing the number of loafers that have to be fed.

Making Over an Old Orchard

By Wm. J. Cooper

ABOUT ten years ago I bought a small place on which there was about two acres of old orchard. The trees were neglected and untrimmed, and where some had died or had blown down the ground had been left vacant, and the orchard had been unplowed for years. The season before I bought it, it did not produce enough fruit to pay to gather.

Neighbors said it would never pay to bother with. The only thing to do, in fact, was to cut it down. Now I reasoned that it took a long time to grow an orchard, and I was getting older every year, so I decided to experiment with it for a time at least.

Beginning about the first of March, I gave it a very thorough and scientific trimming, I say scientific in that I tried to trim according to the rules laid down by successful fruit-growers in our latitude. This is important, for ignorant trimming of an orchard is likely to do more harm than good, and the trimming of an orchard does not mean necessarily cutting the orchard all to pieces.

I did not put any manure on the orchard, as I did not believe it was needed. Early in the spring I plowed it deep and hired a man to spade around the trees where the plow could not go. I then harrowed it down very thoroughly.

I did not put any crop on the orchard that season. Instead I harrowed it at periods, keeping it cultivated all summer.

I sprayed three times, the first time in March, which was the most thorough one of all. The trunks as well as all the limbs were saturated. I sprayed again in May just as the blossoms began to fall, and again about the middle of August.

I did not thin at all; it did not need it. There were about eighty trees in all, and I picked 175 barrels of good apples, for which I got \$1.85 per barrel. I also sold enough culls and cider stock to bring the total receipts of that old orchard to over \$400.

It has not done so well every year, but I have never been without apples to use any season, and several seasons I did better than I did the first season. I have come to the conclusion that any healthy old orchard of the proper varieties can be put on a profitable basis when intelligently handled. Lots of these old orchards can be picked up in the older parts of the country.



Reduced to its lowest terms, good farming is good reading,
good thinking and good work

Spraying Currants for Worms

By T. Greiner

CURRENT-WORMS are very destructive if let alone. Do not let them alone, for it is easy to control them. Buy some white hellebore powder. Every drug-gist keeps it. Use about a tablespoonful to the bucket of water.

Load your sprayer—knapsack, compressed air, or whatever sprayer it may be—and spray. Do this as soon as the first signs of worms are noticed. Delay means danger, perhaps destruction of crop. Dusting the dew-wet bushes with hellebore powder will also give relief. So will spraying with any spray liquid in which a little arsenate of lead has been mixed. Whatever you do, or use, act promptly, and be thorough.

Soils That Will Grow Asparagus

By M. Roberts Conover

ASPARAGUS depends upon its extensive root system for its rapid growth, and as these roots are succulent, tender and grow rapidly when young, a light, friable soil offering little resistance to their extension is necessary.

Soil that is actually wet most of the time will not maintain healthy roots. The asparagus-root has not the equipment of large air-cells which belong to aquatic plants, insuring to their tissues a supply of air, hence asparagus-roots will decay under such conditions.

Whether the soil be red, black or yellow, the essential thing is a certain proportion of sand, insuring ready drainage. Some very fine asparagus is grown upon red soil and also upon soil that appears almost black after a rain. Those soils whose blackness, yellowness or redness is due to clay should not be used. The soil cannot be judged entirely by its color or by its mechanical composition, but by its action after a heavy rain. Clayey soils unfit for asparagus stay packed, and sandy soils are loose. That is the difference.

In preparing for the asparagus-bed, the soil should be of mealy character below the level of the roots. Previous tillage and deep plowing should precede asparagus-planting.

On the other hand, soil that is too dry is a severe test upon the roots in dry weather, hence it is necessary to have some moisture-holding material in the soil. Compost or the rotting foliage of some cover crop meets the need best, insuring protection against the injurious effect of dry weather later in summer.

Do You Know Poison-Ivy?

By C. M. Weed



Poison-ivy

IN MANY localities poison-ivy is permitted to multiply along walls and highways unmolested. Yet it is a real menace to the health of many people and causes great suffering, especially to children. There may be some excuse for leaving it in out-of-the-way places, but it should certainly be exterminated near houses and public roads.

Poison-ivy is readily known by the three characteristic leaflets on each leaf. Their form is well shown in the illustration. The only vine with which they are likely to become confused is the Virginia creeper, or woodbine, which is sometimes called the ivy. But this plant has five leaflets to each leaf.

The Difference in the Fruit

The fruits of these two plants also differ greatly. Those of poison-ivy are grayish white and only about as large as a small pea. Those of the Virginia creeper are deep black and much larger.

The botanists classify the forms of poison-ivy into three distinct species, but these all look alike to the man who wants to be rid of them. One kind climbs trees by means of sucker-like rootlets sent out from the woody stem. Another trails along the ground and sends up erect branches.

Many people seem absolutely immune to its poison. Others are immune at most



Virginia creeper

times, but may be susceptible during hot weather, when they are perspiring freely. Others cannot safely go near the leaves or stems at any time.

The only effective way to get rid of poison-ivy is to pull it up and burn it, root and branch. The best time to pull it up is in the spring when the ground has thawed out and the leaves have not developed. At this time, if you are immune and will wear gloves as an additional precaution, you can do a lot of good in a short time by pulling and piling the ivy. If not immune yourself hire someone who is.

This is a matter of community interest. Get the local grange, improvement society or woman's club interested, and have the entire neighborhood made safer in this respect.

Spraying Grape-Vines

By T. Greiner

A READER asks about spraying grape-vines for San José scale. This insect attacks a good many different trees and plants, but I have never seen any on my grapes. I must spray for mildew and black rot more than for any insect that attacks the grape. The berry-worm gives trouble sometimes. The spraying for grape diseases that I have usually found most effective is that on the dormant wood, posts, wires, etc., in early spring, with an almost saturated solution of common green or iron copperas, or with copper-sulphate solution, say one pound to fifty or one hundred gallons of water. This should be followed by later sprayings with Bordeaux mixture.

Keep the foliage covered with Bordeaux, and you will have little trouble from rot or mildew. If grape leaf-hoppers give trouble, spray along in July, or whenever you see little yellowish wingless insects (the nymphs) on the under side of the lower leaves, with Bordeaux mixture to which some tobacco extract has been added. If other insects like rose-chaffer are present, arsenate of lead, eight pounds to one hundred gallons and a little cheap molasses, may also be added, thus making a general-purpose spray. Just before making this spray, in the second week of July, remove the suckers from lower part of the plants, which will remove also the greater part of the nymphs and eggs.

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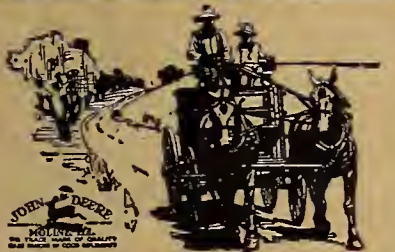
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Dain Hay Loader and Side Delivery Rake

tell you about how to use these tools to handle your hay rapidly and economically. Should you want information about other Dain hay tools, tell us which tool you are interested in. See lower right hand corner of ad, how "to get the books you want."

John Deere Disc Harrows and Corn Planters

This spring pressure harrow pulverizes your soil thoroughly and puts it in condition to grow the biggest crop you ever raised. The extraordinary flexibility of John Deere Disc Harrows due to spring pressure, insures thorough cultivation of your entire field. It leaves small middles and cuts out dead furrows.

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You do the same work with one horse less; if you now use three horses you will only need two; if you use four, three will do the work.

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Ask to see the Davenport wagon at your John Deere Dealer's.

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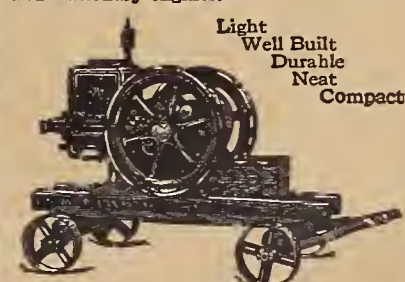
John Deere Plow Company, Moline, Ill.

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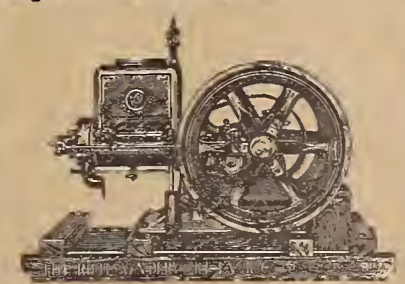
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Develop even more than rated horsepower. Easily started, smooth-running, dependable. Economical in use of fuel. Speed easily increased or decreased. Best type of magneto on the market. Portable and stationary engines.



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R & V "Triumph" Engines can be furnished in sizes 1 to 12-hp., with the hopper-cooling system. This cooling system does away with tank, pump, piping and fittings, making a neat, compact engine noted for its good working qualities. No air-cooled engine troubles to contend with.



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Tells you how to lessen your work every day of the week, and every season of the year. Get this book and see how your work can be made easier, at the same time saving you money. Lower right hand corner of ad. tells you how "to get the books you want."

"To Get the Books You Want"

Write to us at once stating which books you want, and they will be mailed free. To be sure that you get a copy of "Better Farm Implements and How to Use Them" ask us for Package No. X 71.



JOHN DEERE TWO-WAY PLOW

The Sulky with the Steel Frame and the Patent Auto Foot-Shift

A Two-Way Sulky Plow with a steel frame—a great improvement in two-way plows. Something you have never seen before.

Strong, neat in appearance, all steel and malleable,—not cumbersome cast iron, no surplus weight and the lightest draft sulky ever built.

Notice the patent auto foot-shift pedals in the illustration below. They operate like the foot pedals of an automobile. Press the foot pedal; that's all you do to shift the bottoms. Or, if you choose, do it with the hand lever.

The John Deere Two-Way Plow is always in balance, whether operated by man or boy.

Some of the Good Things About the John Deere Two-Way Plow

1. **Steel Frame**
Makes plow strong, light draft, neat in appearance and durable.
2. **Steel Arch**
Special channel steel, one of the strongest shapes into which steel is rolled.
3. **All Steel and Malleable**
Practically unbreakable. You can pound any part of it with a hammer.
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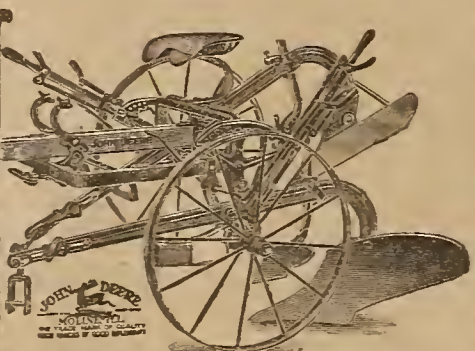
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GARDENING

By T. GREINER

Fertilizers for Sweet and Irish Potatoes

SWEET potatoes are the one crop for which I prefer hill manuring to broadcast application, no matter whether farm manures or commercial fertilizers are to be used.

Stable manure is also good. For a sandy loam that is fairly well supplied with vegetable matter or humus any honestly compounded complete fertilizer having two or more per cent. nitrogen, about eight phosphoric acid and six or eight potash may be expected to give good results.

For the best mode of application, either of this fertilizer or of farm manure, open deep furrows, and scatter the manure or fertilizer into the furrows where the hills will be. Then mix it well with the soil. Ridge up the furrows, and set your plants.

A similar method of manuring may be used for Irish potatoes. Manure or fertilizers should, however, be mixed thoroughly in the bottom of the furrows with the soil, by running the furrowing blade or similar tool once more in the bottom of furrow, then planting the potatoes and covering them. Sometimes I use four hundred pounds of acid phosphate and two hundred pounds of sulphate of potash to the acre in this way.

Lima Beans for Winter

Lima beans are never so good as when freshly gathered in the immature stage and at once prepared for the table. Then they are delicious and a treat. When shelled, fresh from the vines, in that stage, and properly canned, they are still quite palatable, more so than when merely dried. A moderate amount of canned Limas will come handy next winter. Be sure they are young and freshly gathered and shelled when you put them up. The cans with spring covers are best. Sterilize them by boiling. Fill with the beans and cold water, set the cans in a boiler on a false bottom, and boil one hour. Take out, and at once tighten the covers. Next day slightly loosen the cover, and boil another hour, again tightening the cover on removal. Boil again for one hour on next day. Remove to cool, wrap can in paper, and put in a cool dark place. Some persons have good success by boiling only once for three hours. Dry ripe Limas may be gathered and stored like any other pole-bean, and cooked in winter just as common beans are cooked. They are, however, a different thing from the fresh green Lima.

Storing Carrots and Pumpkins

Carrots and pumpkins cannot be put in the same class for storage. Pumpkins require a higher temperature and a drier atmosphere to keep well. The best way to keep pumpkins in the fresh state is by putting them on shelves where the temperature is from fifty to sixty degrees Fahrenheit. But they can also be cut and dried, or cooked as for pies and canned.

Carrots should be stored in a regular root-house, or in a smaller way in bins or boxes in an ordinary cool cellar.

Grafting or Budding Grapes

A Nebraska lady reader tells me that she has some nice wild-grape vines which she would like to bud or graft to good cultivated varieties, and asks me how it is done, and at what time of year, and whether this top-working is usually done by budding or grafting.

Persons of some experience sometimes graft old grape-vines of inferior varieties to other more desirable varieties, but this is always a particular job and not an easy thing to do. The best method, no doubt, is to cut the old stock down in early spring, several inches below the surface of the ground, then split the stub and insert one or two cuttings or scions of the variety wanted, each with three buds. Cut the lower end, just below the lowest bud, in the shape of a wedge, and insert this firmly into the split stock. Sometimes special tools are used in this operation. It can be done with saw and knife, however. No wax is to be used. The stock and scions are then covered with earth. I would hardly advise our

Nebraska friend to undertake such work. Good, strong grape-vines can be bought from any reliable nurseryman for a few cents apiece, and if planted in suitable soil and location, and properly taken care of, may be expected to give a few clusters even as early as the second year from planting, a half-crop the third year and a good crop year after year after that. This course would probably lead more surely to success, and to the enjoyment of good grapes, than the proposed plan of top-working wild grapes.

For an Early Strawberry

A good early berry is the newly introduced Ozark. It really leaves little to be desired in a first-early strawberry. It is as early as any we ever had. It is large in size, high in color and quality, and the plant is prolific and produces runners freely.

If you do not have it now, try to secure some early potted plants, and put them out as early as you can get well-rooted potted plants. I shall pot my own supply, using paper or wooden plant-boxes and a good black (mucky) soil in which to let the runners strike root.

For Success, Feed

We should not imagine that we can raise celery on any kind of soil or with any kind of manuring. The more than sixty thousand celery-plants on one acre require a lot of food and a lot of water. Muck-lands furnish the moisture from below, as that soil, being composed mostly of decayed and decaying vegetable matter, acts very much like a sponge in absorbing and retaining water.

Even then irrigation from the top is found useful and beneficial in a dry season. Food should be furnished in abundance, also in annual applications of from one to two tons per acre of high-grade complete fertilizer. On our upland loams, whether more or less sandy, or somewhat clayey, our first concern, in order to fit them for growing celery, must be to fill them with vegetable matter, either by the lavish use of stable manure or by plowing down clover or similar crops, which will increase the water-holding capacity of the land. We must also resort to artificial irrigation in a dry time.

Unless stable manure of the best kind is used freely, heavy applications of fertilizers will also be required, and may be as necessary as on the muck-lands. With these requirements properly looked after, we can raise as big crops of celery on our strong upland loams, and even on the thin sandy soils, just as well as on muck-lands.

The Red-Winged Blackbird

By H. W. Weisgerber

THE robin and bluebird have enjoyed the distinction of being the true harbingers of spring, in the public press, for so many years that it is about time that some of the minor poets should be heard from and given credit for being early on the ground.

The first-noted worthies have succeeded in drawing attention to themselves because they go to town to "shop" on the front lawns and trade in the "departments" of the garden, and thus people see them and then report their observations to the editor—and so the robin and bluebird get their names in the paper, without doing anything worth while to themselves or to the world at large.

The birds, and likewise the farmers, the real worthies and workers that protect the



food of the world and gather it for the inhabitants thereof, are the ones of whom not much is said; yet they are the real saviors.

And so, as soon as our spring month of April is ushered in, there come the companies of male redwings that always settle their differences in loud and noisy "congresses." They do not come to town and talk from the house-tops, and therefore their arrival is not reported in the public press. But the farmer knows of their presence, and so, no doubt, welcomes their coming, for it means that spring, with summer at its heels, is at hand.

Where their numbers are excessive, they are, no doubt, provoking; but it should be remembered that "nearly seven eighths of their food is made up of weed-seeds or of insects injurious to agriculture, indicating that the bird should be protected.

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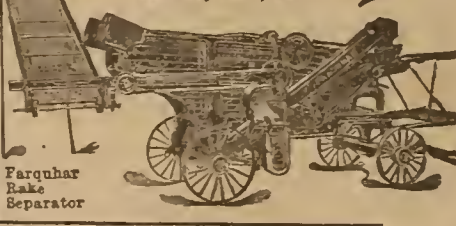
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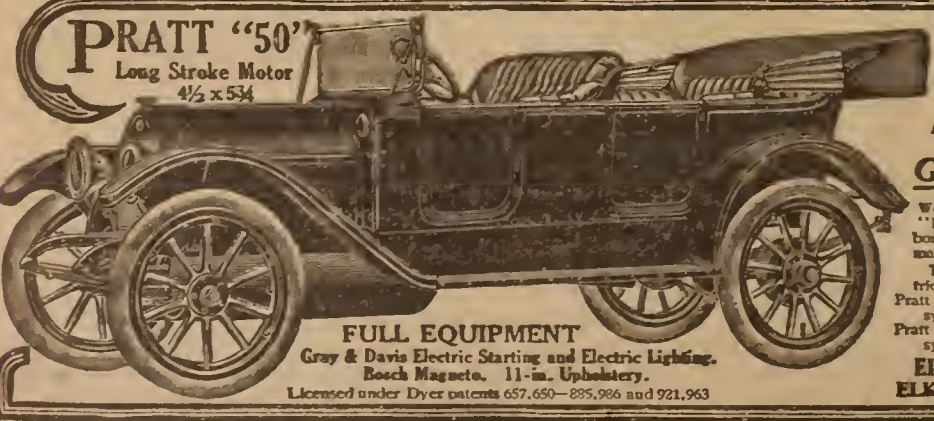
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Live Stock and Dairy

Developing the High Butter-Producing Cow

How It is Done at Meridale Farms

By W. H. Jenkins

FARMERS want a cow that has a capacity for five hundred pounds of butter-fat in one year. It can be done, and is being done. Breeding, feeding and environment have given her the power to produce milk yielding that much butter-fat and still maintain her constitutional vigor. A cow bred for butter-fat production can produce about three times as much butter-fat from a liberal, well-balanced ration as the average cow when she is given full opportunity to do her best. If the milk from the average cow of the butter breeds manufactured into butter and by-products of the milk is worth \$75 in one year, the



Yearling heifer that bred to produce 500 pounds of butter-fat annually

milk from the cow with a five-hundred-pound butter-fat record is worth \$225, and if she is a pure-bred cow her calf when weaned from the milk food is worth at least from \$50 to \$100 more, making the gross receipts from the cow close to \$300.

It is evident that one of the best ways to learn how to breed and develop the five-hundred-pound cow is to go where such cows are bred and developed. This is what the writer did. I went to T. M. Ware, Superintendent of the Meridale Farms, Delaware County, New York.

I said to Mr. Ware, "How would you begin to get the five-hundred-pound butter-fat, or the ten-thousand-pound milk-producing cow?"

He said, "To start just right, I would want her sired by a sire from a cow that had the milking habit, also I would want the mother of this cow similarly sired and the farther back this line of breeding had been carried the better. These dams should have given a good quantity of milk that contained a high per cent. of fat and were persistent milkers, of good size, with a good constitution and of strong vitality."

"How would you feed and care for the cow during the time of pregnancy?"

"She should be fed so she is strong and in good flesh, but not liberally on concen-



This cow has a 500-pound butter-fat record and is the mother of promising calves

trated foods such as cottonseed or corn meal. Near the time of calving feed largely bran, roots and other succulent foods."

"Having a strong, healthy calf as the result of causes mentioned," I continued, "how would you feed the calf for its best development?"

"First," he said, "we let the calf suck the cow two or three times. For the first three or four weeks we feed the calf three times a day as much new milk as it can digest well, then for three or four weeks more gradually substitute skim-milk for the whole milk and add to it a little oil-meal. When the calf is fully on skim-milk, it is given, besides all the hay it will eat, also a mixture of dry ground grains."

Later I saw how the calves were housed. A large, warm, light, sanitary barn was divided into stalls, and in each three or four calves were kept. The calves that were five or six months old were turned out on pasture during summer and on pleasant days, but all calves were sheltered during cold, stormy weather. Mr. Ware told me that

skim-milk was usually fed until the calves were one year old, and all the time they were fully fed on grains and green feed so as to get a full, natural development. He said that calves should always eat some dry hay to counteract the effects of such watery foods as milk and grass. The utmost care was taken to prevent germ diseases by sterilizing all the feeding-vessels. Their only loss was from cholera in the young calf.

"Now," I said, "tell me how you feed the yearling heifer."

"Well," he said, "we feed her on the same lines as the calf; namely, we try to keep her growing all the time. In the summer she has good pasture, generally with a little grain. In winter, clover, mixed hay and ensilage are fed with sufficient grain to keep her in good growing condition all the time. The wheat feeds such as bran are especially good for the growing animal."

"How soon would you have the heifer drop her first calf?"

"I would prefer she should be nearer three years old than two, for she should be nearly mature. She will make a better cow."

It was evident that Mr. Ware has got his heifers well started; now all he has to do is to keep them growing and developing normally by feeding and caring for them about the same as milch cows until fully matured at four or five years. Then yearly records and tests will show their capacity for production of butter-fat.

All of them may not come up to five hundred pounds of butter-fat, but he will get many more by such scientific breeding, feeding and housing than by careless methods, and he will get very few average cows.

Having bred and developed a cow with a capacity for making five hundred pounds of butter-fat, or giving ten thousand pounds of milk in one year, she may not do so unless she is rightly fed, housed and cared for, so we must take in consideration the questions of nutrition, sanitation, and handling, if we are working for maximum production.

At Meridale Farms the cows are fed a fairly balanced, palatable and succulent ration. In the winter it is corn-silage, alfalfa, clover and mixed hay with a liberal grain ration to balance the roughage. The amount is regulated according to the capacity of the cow. In summer the ration is



A skim-milk calf that shows the result of good care and feed

good pasture, with sufficient grain and soiling crops to keep the cow fully fed all the time. The cows are handled so carefully and gently that they are always kept quiet, and never disturbed in a way that hinders the secretion or flow of milk. Many cows in the Meridale herd were so like pets that you could handle them without a halter.

The requisites I have mentioned have resulted in a herd of three hundred cows at Meridale Farms, with a yearly average of close to five hundred pounds of butter-fat. When one has developed a cow with the five-hundred-pounds capacity, to keep her up to this high production it is almost necessary to weigh her milk every day, then any falling off from her normal capacity shows she has not been rightly fed and cared for and will lead to a study of keeping her up.

Markets for Sweet Cream

By Maurice Floyd

ON FARMS where a hand separator is used, more money can often be obtained by selling sweet cream to hotels, confectioners and ice-cream makers than by selling sour cream to the creamery. Of course, it is more trouble to market sweet cream than sour, as the product must be taken to market oftener, and care must be exercised to keep the cream perfectly sweet, but where the market is not too far away, all these difficulties can be met nicely.

Ice-cream manufacturers desire a thin cream, testing about eighteen per cent. fat, and this of course leaves less skim-milk on the farm than when a high-test cream is marketed, but the better price received for the sweet cream is usually enough to pay for this and the extra trouble.

On our local market at Beeville, Texas, the price paid for sweet cream is more than double the price of sour cream, but of course this price is somewhat abnormal on account of strictly local conditions; however, on most markets the price is about forty per cent. above the creamery quotations.

It is no part of the cow's obligation to be ashamed of it if she fails to pay a profit on the cost of her keep, but it is a reproach to the owner who keeps her.



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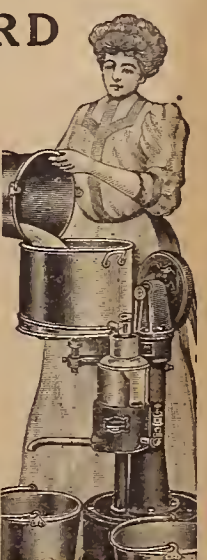
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Dollar-a-Pound Wool

By C. J. Oviatt

WHEN the extensive wool exhibits of the University of Wyoming were prepared much long-staple wool was saved from the clip of the college flock. This included fleeces from Lincoln, Leicester, Cotswold and, later, Dartmore sheep. Except for their extreme length, these were typical fleeces of the various breeds. One fleece which had been on exhibition for several years had an average length of twenty-four inches and an original weight of forty-three pounds.

One Hundred Dollars for a Hundred-Pound Sack

Wishing to replace these soiled and torn fleeces with fresh ones, the writer made inquiry as to the market for such wool. Advice came in the form of an offer of a dollar a pound in the grease and transportation charges for all wool with a staple length of twelve inches or more. About one hundred pounds of this wool was sacked and shipped, and in due season a check for one hundred dollars was received.

The demand for such wool is the result of modern fashion. Not only is much of it used in the manufacture of garments, but wool with an exceptional length with an application of a permanent dye oft finds its way into milady's hair-dressing parlor, and since this is more sane and sanitary than hair of questionable origin the demand for such will probably increase. Braids and crimps of many kinds can be made from such wool, and if the supply was not so limited its usages would multiply.

Fearing that the demand for such wool would be subject to sudden changes of fashion, a letter of inquiry was sent. We quote sentences from the manufacturer's answer. "At the present time the demand for such raw material is much greater than the supply, and unless something unusual and unforeseen happens the demand will increase in the future. I am inventing and producing many new articles for which we need such long-staple wool. I wish also to remark that I bought last month two thousand pounds from England." He further infers that long-staple wool is becoming a necessity, and fashion will not reverse the demand.

Its Production is Not Difficult

By practising a little selection and breeding the production of such wool is not difficult. Especially is this true in the West and North, where a cool climate favors longer growth, and in the summer the excessive covering is not uncomfortable. In other sections this difficulty may be overcome by proper housing and shearing at a time to avoid the summer heat. Many of the sheep of the above-mentioned breeds produced wool which qualified for the dollar-a-pound price. The Lincoln fleece mentioned was from a ewe and brought \$43. True she is an exceptional ewe, but proper breeding and selection will soon bring a good flock to a standard of at least a twelve-inch staple. The Dartmores, with their wool characterized by good crimp and extreme luster, also produce a long staple and respond readily to selection. One ram produced twenty-two inches of staple in fifteen months. We have also many Cotswold and Leicester fleeces with a staple over twelve inches. Any of these breeds and perhaps others can be made to grow long wool.

Certainly here is an opportunity for many breeders who now have flocks bearing long-staple wool. From all investigation the market seems steady and strong and not liable to a reverse. If a few inches in length increases the price five times or more there is sufficient incentive to, at least, a fair trial.

Horse Sense in Raising Hogs

[CONTINUED FROM PAGE 5]

he has a group of five hog-lots and three hog-houses back of his barn and well away from his commodious farm home. These are so arranged as to enable him to separate various hoods or litters for the protection of young stock or for feeding; also to feed from his cribs or to give access to his cornfields, and to load for shipment, all with a minimum of labor to himself and of worry to his stock.

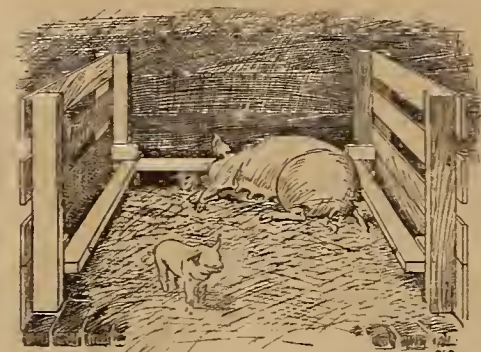
Water is piped to each of the lots from a central concrete tank near the house, which is kept filled by pumps driven by gasoline engines. Gravity carries the water from this tank to auxiliary tanks, and these supply drinking-fountains in the different lots. The flow into the drinking-fountains is automatically controlled, so that there are no puddles about, and the fountains seldom become fouled. To aid further toward cleanliness, the approach to each fountain is up a slight incline of concrete. This prevents wallowing. In the winter the water-tanks are protected from freezing by hanks of straw manure, and as a further precaution the supply-tank is equipped with a heater.

Bringing out fresh litters of pigs in February and early March, however, is attended with the dangers due to sudden and extreme changes of temperature. One of Mr. Bear's hog-houses was built with just these changes in mind. It is a plain structure of matched boards, but it serves its special purpose as

well as other purposes most satisfactorily. The wall is double, and has an enclosed air-chamber up to the level of the tops of the pens inside, of which there are fourteen.

Seven large windows on the south side give abundance of light throughout the day, and half-windows and a door at each end help in this. The upper sashes of the large windows are mounted with weights and pulleys, and may be easily lowered for ventilation. The half-windows at the ends may also be dropped for the same purpose. The floor is of vitrified brick, which makes thorough cleansing possible, but is, of course, kept well covered with straw when the pens are occupied. He uses "horse sense" in every detail of his work.

The plan of the house is not unusual, but inside are some contrivances of Mr. Bear's own invention, which neighbors have been quick to copy. One of these is a home-made kind of pen-gate. This slides up and down, and may be set at any desired height. On one side, about a third of the way from the bottom of the gate, is a short bar of wood, set diagonally and turning on an iron bolt. This bar is pointed at the lower end, and the point fits into notches in the casing at the side of the gate. If, for example, you wish to keep the sow in her pen and at the same time allow her pigs to run, the gate is lifted perhaps eight or ten inches. The point of the locking-device is then set in one of the notches, and the gate cannot possibly drop. Again, the gate can be locked so that the sow cannot lift it. The upper lock consists of a strip of wood one inch thick, two inches wide, and about a foot long. One end of this is fastened with a strip of iron to the top cross-cleat of the gate in such a manner that the other end swings freely up and down. The loose end is cut diagonally, and when dropped as far



The pigs cannot be crushed in a corner of a pen of this construction

as it will go—to within an inch and a half of the cross-cleat—it jams against the gate's side support. A push upward, therefore, merely increases the friction and locks the gate the tighter. The harder a sow pushes to get out, then, the more securely she locks herself in.

Each pen is also provided with a frame to prevent a sow from crushing her pigs in a corner nest or against a wall. Such frames are not uncommon, but these of Mr. Bear's have the advantage of being easily removable, in order to facilitate the business of cleaning the pens. Imagine a rectangular frame, of oak, 2x4, open on one side, with the ends of the pieces projecting about two inches at the corners, and you have the design. The frame is dropped flat on the floor, open side toward the front. It is then drawn forward, the side arms being short enough to give room for this. Then the back of the frame is lifted and the projecting ends of the rear crosspiece are slipped into slots between two blocks nailed to the partitions. The forward ends of the arms are held up by iron pins passing through them, and into holes made for the purpose in the pen partitions. Once a frame is set, it cannot be worked out of place by any of a pen's occupants. These frames save Mr. Bear many pigs every year.

Entrance to the hog-house may be had directly from any of three of the hog-lots by fenced inclines as shown in the picture of the building's exterior.

The central passageway of the hog-house is very convenient, also, in the handling of hogs when it comes time to wire their noses to prevent rooting, for example. At the door from the house to a feeding-floor there is a hog-trap. Hogs, driven in from the lots, move down the passage. One of them steps into the trap on its way through to the feeding-floor, and just as it is about to step out a lever on the trap is shifted, and the hog is caught securely by the neck. It can neither push forward nor back out. The work of adjusting the nose-wire is then quickly and easily performed, and the hog set free.

Again, the house, arranged as it is, makes the loading of hogs for transport to the railroad easy. The hogs selected for shipment are assembled on the feeding-floor and fed. Then, when they are ready to be loaded, they are driven, one or more at a time, through the central passage of the hog-house, up a movable incline set directly opposite the east door, and into the waiting wagon. The whole aim is not to worry the animals and cause a loss of valuable flesh. To aid in this, movable gates are provided. A hog, once in the passage, is cut off from returning to the feeding-floor by one of these movable gates in the hands of the man doing the loading. It is then gently crowded forward and on out into the wagon.

Cattle Prices are Not Alluring

By W. S. A. Smith

THE month of April is without doubt the hardest month of the year on live stock. Cold weather and a full stomach through the winter hurts no animal, but the prevailing custom with renters and some shiftless farmers of allowing stock to wander through the fields in April picking up a precarious living in wind and water is not conducive to a fat pocketbook, and with the high prices now prevailing for stock cattle no man can afford to have cattle lose weight.

Stock cattle are still very high, and, with no immediate prospect of any great decline, for this reason alone it will certainly pay not to stint the feed now.

Some Dry Feed Now is a Good Investment

As a general rule, heretofore an advance per hundredweight above purchase price has always been required in order to pay for food consumed. This year, with stockers at eight cents, and the prevailing prices for feed, a man is well paid for his farm produce if he gets no advance in price, as he can put on one pound gain daily for eight cents. If he attempts to increase this gain his cost will increase. Cattle will shrink the first two weeks on washy grass, and a little dry feed at this time is money well invested.

There is nothing as yet particularly alluring in fat-cattle prices. The bulk of the cattle bought last fall have been sold at a profit, and the cattle that replaced them have for the last three months cost between seven and eight cents, and that's all they are bringing as short-fed cattle now. The general opinion still seems to be we are due for an advance in light-weight cattle, but it is an unreliable thing to figure on.

Of Interest to Sheep Importers

By John P. Ross

EVENTS of great interest and importance to breeders of mutton-and-wool sheep everywhere are to take place in England during the coming summer. On June 30th the International Congress of Sheep-Breeders will be held in the city of Bristol, the port at which in the colonial days the produce of our southern plantations was, for the most part, landed.

At this meeting the diseases of lambs and young sheep will form the chief subject of discussion. Men of world-wide fame are expected to be present, and it is hoped that much useful knowledge will be gained on this subject which is important.

The Royal Agricultural Show is to be held in the same city from July 1st to the 4th.

On July 9th and 10th the dispersal sale of the celebrated flock of Lincoln long-wool sheep of the late Henry Dudding is to be held; and on the twenty-third that of the equally celebrated Hampshire Downs of James Flower.

Sheepmen from all over the world will be present or be represented by buyers at the sales, but it is probable that this country will send the largest delegation, because nowhere is the value of individuals of these two flocks more highly appreciated than with us. There is hardly a breeder of thoroughbred Hampshires or Lincolns in America who does not owe something of his success to these families; and these sales will offer the last chance of securing rams and ewes directly from their homes.

The Wool-Market Again Active

By John P. Ross

MANY circumstances combined to depress the sheep-market toward the close of last month. Shipments from Colorado and parts of Nebraska and Wyoming had been very heavy, while the demand from eastern centers was light. The early Lenten season, too, had its effect in lessening consumption, and then came the fearful havoc of storm, flood and fire to disorganize the traffic of almost the whole country, unsettling for a time all the usual conditions which govern the course of trade.

Add to all this the special difficulties which are just now affecting sheep interests from the uncertainty of the course which will be taken as to the wool tariff and the admission of free meats, and the wonder is that the market has not altogether broken down.

No more satisfactory proof of the healthy condition of the sheep industry could be asked for than can be gathered from the fact that at the beginning of the present month, a reaction had taken place, putting prices very near where they were at the highest period of the new year.

Don't Feed Beyond the Handy Weights

The wool-market, too, has shown quite a revival in activity; Boston reports show that a good demand exists for nearly all classes of wool, and foreign advices all point to a healthy condition of the trade.

Colorado and many of the western States are still feeding large numbers of both sheep and lambs, and when these sources of supply are exhausted, fat sheep and lambs from Texas and Kentucky will be coming in. It is therefore not likely that any rise in prices will occur during the spring and summer, and it would seem a wise proceeding for those who have stock finished in good shape to market them now, rather than to keep them in the expectation of higher prices. It

is especially undesirable to keep on feeding either sheep or lambs until they get beyond what are considered to be "handy weights."

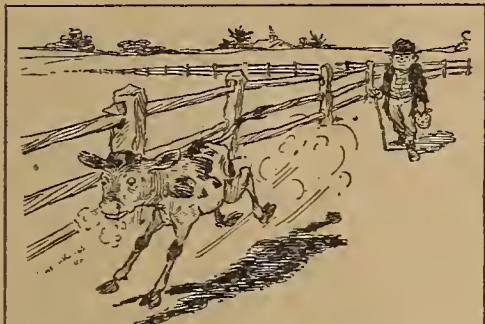
Easter Lambs Were Scarce

A rather notable feature of the market has been the almost entire absence of real Easter lamb. When one considers the immense prices that wealthy individuals and fashionable hotels and restaurants willingly pay for this luxury, the short time required to produce a fat lamb which will dress out from twenty to twenty-five pounds and its small money cost, the small number forthcoming was really remarkable.

Of course care and patience are needed, but no real labor is attached to it. It is not really so troublesome as the raising of incubator chickens; in fact, it is a good deal like the highly lucrative "cut-flower" business, for, as the plant still remains to produce a new crop of flowers, so the ewe remains to produce lambs perhaps for many years.

Two or three years ago I tried, through the columns of FARM AND FIRESIDE, to get up a little enthusiasm for this special cult, because in my young days I found more money in it than in any other branch of the sheep business. I much regret to see that its advantages are so little appreciated.

Of course this is a winter branch of the business, but preparations have to be made, and the ewes intended to be used for it have to be selected and made ready at least by the middle of June.



A Choppy Hog-Market

By Lloyd K. Brown

THE hog-market has remained much the same of late. Scarcity of supply on one side and insistent fresh-meat demand on the other have maintained prices. Daily variations in receipts have caused corresponding fluctuations, but the average price from week to week varies but little. Muddy roads and spring field work have caused the choppy market which is to be expected this season. Eastern demand continues strong, and packers, to supply their fresh-meat trade, must pay the price or remain out of business; they have but little control over the market.

Both the eastern demand and stock-hog demand are expected to diminish during May, so that prices may decline unless the supply also increases.

Unusual Activity in the Hog Belt

The floods crippled the railroad service to the south and east of Chicago and temporarily curtailed demand for meats, but with the return of regular service demand for pork is increased, especially from the stricken district, and from the south beyond, which was also cut off from Chicago.

The heavy hogs continue to predominate in the market, and consequently the light-weight hogs maintain their premium. For the present the average weight may increase some, but before long the fall hog crop will begin to be noticed and pull down the average. Feeding and breeding are being carried on to their fullest extent.

Demand for Pure-Bred Sows is Brisk

Feeding is profitable, and all hogs are therefore fed to a heavy weight, and almost all available females are being saved for breeding purposes.

In the central corn-belt States the increase in sows is but little due to replacement of breeding stock lost from cholera. The States of secondary importance in producing pork have increased their number considerably. The pure-bred-sow business this season has been one of the largest in years, which is a good criterion of general breeding operations.

The market this spring resembles that of three years ago, but eleven-cent hogs cannot be expected. However, no material change need to be expected for some weeks.

Marketing Cattle in Austria

By James B. Morman

THE American farmer can learn something about marketing from the foreigner. In this country the producer of cattle for meat is doubly handicapped. In the first place, it is a time of high prices for farm labor and everything the farmer has to buy, so that the problem of raising cattle profitably for the meat trade is most difficult.

The experiment stations have been making experiments to determine the most economical methods of feeding cattle to yield the greatest gains in flesh, but little has been done to show the farmer how he can market his stock more profitably. The

feeding experiments are of some practical and scientific value, but it takes time and study and capital to accomplish important results. As a rule the average farmer is unable to meet the conditions successfully, and as a consequence he frequently has to sell without profit or even at a loss. Accounts kept by some of the experiment stations show that this has occurred when cost and labor items are carefully ascertained.

But in the marketing of the cattle—that is where the rub comes. When the farmer desires to sell, he cannot demand his own price. If he could, he would fix it according to the cost of production and the addition of a little profit on his investment. On business principles, the producer is entitled to a profit. But instead of fixing the price, the farmer must sell to local jobbers or to meat-trust agents at the price they name, and the farmer is again handicapped.

Similar conditions prevailed in Austria before the year 1907. From the farmer to the consumer, animals intended for slaughter went through the hands of a whole series of middlemen. The consequences were that meat was very dear when purchased by the consumer, while the profits of the cattle-raiser were very small. At that time the farmer who raised cattle for meat was thrown mainly on his own resources and there was scarcely any other course for him to pursue than to sell his live stock to the jobber. The small farmer, with only a few animals, would have gained nothing by seeking to dispose of his cattle to a small body of consumers. The cost of everything in 1907 was so high that he would have gained little by this method of sale.

Under these circumstances the stockmen realized that the only course open to them was to organize co-operatively for the sale of their cattle. As a means to this end, the Austrian National Association of Agricultural Societies established a central market in Vienna in 1907 in order that the profits from the sale of meat animals might go to the breeder instead of to the jobber and other middlemen. The collection and sale of live stock are carried on as follows:

The national society sends into the most important stock-raising districts a large number of trustworthy agents who form a connecting link between the Vienna Institute and the cattle-raisers. By this intercourse between agent and farmer it becomes quite definitely known about how many animals there are for sale in any particular region. When there are in any locality sufficient cattle to make a car-load, the confidential agent, according to a prearranged agreement with the stockman, tells him when to bring his stock to the nearest railroad station.

Figures Show the Real Success

The agent then sees to it that the load is forwarded direct to Vienna, where the manager of the central market takes it in charge and sells it at the right time. Sales are made on commission. The balance of the proceeds the society immediately transmits to the owners of the cattle. The commission alone is deducted from the price of sale, since the central society makes no charge for services.

The benefits of the preceding plan may easily be seen. In the places from which cattle are forwarded to Vienna the middlemen immediately offered higher prices, and where stock are not sold in the co-operative way the farmers get higher returns. The statistics of sales indicate a real success, for the Vienna Institute has sold cattle in five years valued at about \$4,532,850. In the year 1911 alone the cattle sold were valued at about \$2,640,000.

In the Province of Galicia the local co-operative societies are making an attempt to put the system in operation, which has been successfully carried out by the confidential agents of the Vienna Institute in other parts of the country. They are well prepared for this experiment because small farmers are greatly in the majority in that territory. Galicia is by far the richest cattle-raising part of Austria-Hungary.

There are Local Credit Societies

The best and most prosperous cattle-breeding associations are to be found there, and certainly the co-operative credit societies are among the best in the country. But the small farmer in Galicia is generally in need of ready money, so that at present he is glad to sell his cattle at a low price to jobbers who pay him in cash. If, however, he should offer his cattle for sale through the local co-operative society, it would not pay him until after the money had been received from the sale of the cattle. Therefore, the co-operative societies in Galicia have made arrangements with the local credit societies to furnish some advance money to the farmer as a part of the sales price of the stock, and for this advance of money the co-operative society undertakes to be security.

The government has promoted this important movement between the societies not only by means of financial assistance, but also by the creation of a special office under the authority of the minister of agriculture.

Besides the ten central markets which have been established, there are in Austria no less than one hundred and thirty local co-operative societies for the sale of meat animals. Their total sales annually amount to many millions of dollars.

\$65,000,000 would be saved annually by the exclusive use of DE LAVAL CREAM SEPARATORS

It is estimated that a million cow owners in the United States are still skimming their milk by some wasteful "gravity" method.

At an average of four cows to the farm and an average cream loss of \$10. per cow per year (it is more often from \$15. to \$25.) all of which could be saved with the use of a De Laval Cream Separator, this alone represents an annual cream loss of \$40,000,000.

Then there are, all told, perhaps a half million inferior and old and worn out machines in use whose owners could easily save \$5. per cow per year by exchanging their "cream wasting" machines for De Laval's, and figuring on an average of six cows per farm, this represents another loss of \$15,000,000 at least.

Then to this tremendous cream waste through the use of inferior separators must be added the excessive cost for repairs on cheap and inferior machines and the cost of replacing machines which should last from ten to twenty years but which are ready for the scrap heap in two or three years. There must also be taken into consideration the loss in lower prices received for cream and butter due to inferior quality of cream produced by poor separators, all of which must easily equal at least \$10,000,000 more.

This makes a grand total of \$65,000,000 which would be saved to the cow owners in this country by the exclusive use of De Laval Cream Separators.

At first sight these figures may seem startling but any experienced dairyman or creameryman will agree that the cream and other losses without a separator or with an inferior one will average a good deal higher than the above estimates and that these figures are really very conservative.

Any cow owner who is selling cream or making butter and who is not using any cream separator or an inferior machine, is really paying for a De Laval in his cream losses and at the same time depriving himself of the benefit of its use.

De Laval Separators are not only superior to all others in skimming efficiency but are at the same time cheapest in proportion to actual capacity, while they are so much better made that they last from two to ten times longer.

No cow owner can logically make the excuse that he cannot afford to buy a De Laval, because it will save its cost over "gravity" separation in six months and over any other separator in a year and is sold for either cash or on such liberal terms that it will actually pay for itself while it is being used.

It will surely be to your advantage to join the million and a half satisfied users of De Laval's. A little investigation will prove to you that the truth of the matter is you really cannot afford to sell cream or make butter **WITHOUT** the use of a De Laval Cream Separator.

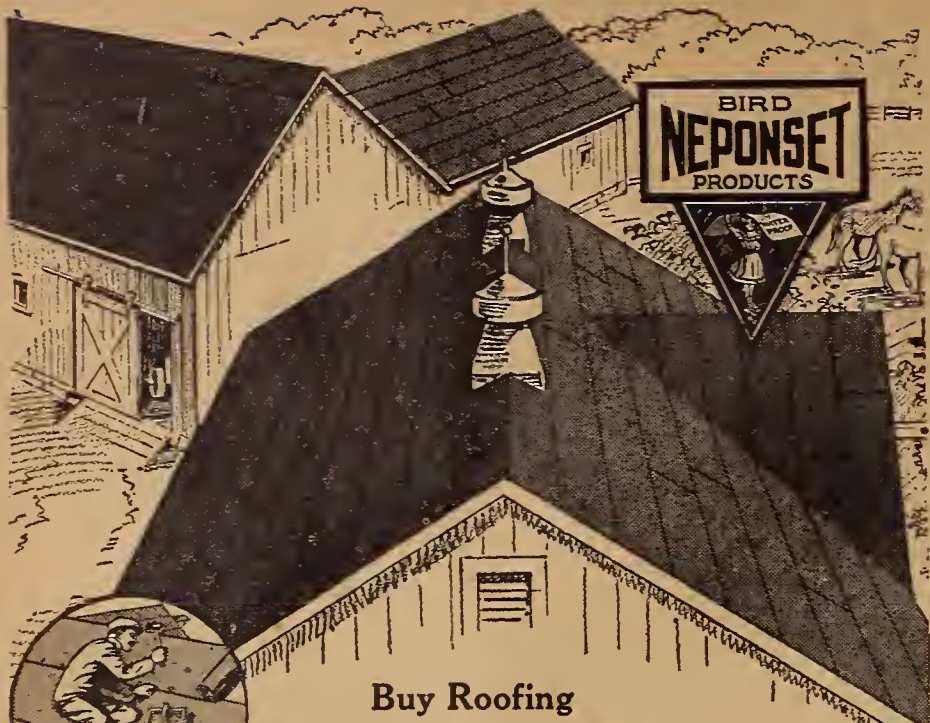
The nearest De Laval agent will be glad to demonstrate this to your own satisfaction or you may write to us direct.

The new 72-page De Laval Dairy Hand Book, in which important dairy questions are ably discussed by the best authorities, is a book that every cow owner should have. Mailed free upon request if you mention this paper. New 1913 De Laval catalog also mailed upon request. Write to nearest office.

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Poultry-Raising

Home-Made Portable Poultry-Houses

By W. C. Smith

VERY often the farm tenant or the village renter wishes to keep a larger number of fowls than he has housing accommodations for. In such cases the more expensive buildings cannot be afforded. He needs most of all simple, portable, inexpensive houses. To fill this need I have worked out the following plan. The houses are cheaply built and can be readily moved from place to place.

Two six-by-nine colony houses with shed roofs six feet high in front and four and one-half feet high at the rear are set in line ten feet apart, facing the south. The material used in these houses is the cheapest that will nail up in a substantial manner and is as light as can be had. Usually one half or three fourths inch stuff is used for sheathing and two-by-three-inch material for the framework.

The roofs of both houses and the outside ends, that is, the ends of the extreme east and west, are covered with roofing-paper. The rear wall of each house is also covered with the same material. The fronts are boarded up three feet from the bottom, and the remaining three feet covered with netting. A curtain is framed to swing in this opening on cold days. Fig. 1 illustrates my meaning. The right-hand house has a door in each end, while the other house has a door at the inside end.

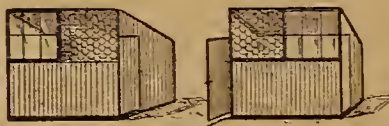


Fig. 1—Showing how the houses are placed before being joined



Fig. 2—The complete house with panels and roof in place

A section twelve by four and one-half feet is now made of the same material as the houses and which will fit the space at the rear between the two houses and lap one foot on each. Another is made for the roof ten and one half by twelve feet, and another frame boarded half-way up and completed with netting is made for the front. These sections are fastened in place by means of hooks on the inside corners of each section fastened into staples driven in the walls of the original houses.

The central part of the house can be used as a scratch-pen and the colony houses as roosting-quarters. Windows may be placed in the fronts, and the completed building will have the appearance of Fig. 2. The building will care for from forty to fifty adult fowls, and a partition placed through the middle of the scratch pens will divide it into two compartments.

If the colony houses are placed on runners allowances must be made in the height of the different sections to make up for the width of the runners. The houses may be built in any size desired and the whole thing made ready to move by simply unhooking the different sections and loading them onto a wagon.

Knowing How with Hens

[CONTINUED FROM PAGE 5]

"Do you sell both stock and eggs?"
"Yes. Perhaps one third of the receipts for the poultry is for stock sold."

"Do you advertise your eggs and stock?"

"Yes, in leading poultry papers, but I get the best returns from advertising by showing birds. I exhibit at the principal poultry shows, and the prize-money more than pays my expenses. In this way I keep in touch with the best class of buyers and keep my business before the public."

"What do you do with the eggs out of the hatching season?"

"I have customers in New York City for strictly fresh eggs who pay me more than market quotations."

All His Capital Was Well Invested

The next subject we discussed was the housing, care and feeding of fowls. Just across the driveway at the rear of the farm-house and perhaps four or five rods distant from it is the poultry-house. It is a long, narrow, low building about seventy-five feet long divided into six rooms. For each room there is an outside yard. The different breeds are separately confined in these yards all the time, except when they are given the range of the farm. This is given on alternate days, which makes an outing for each flock about once a week. The buildings and furnishings are just what is needed for sanitary housing and convenience—no un-

necessary expenditures or tying up of capital in luxuries that increase the amount charged to interest on investment. What is practical and essential is in the plant, nothing more.

When asked whether he had a special system of feeding, he said, "I don't know that I have, except I like to let the hens feed themselves most of the time. I don't believe much in slops and wet mashies. They are not natural to bird nature, and they make extra work. I am a busy farmer, and I want to feed them right and do it quickly so I can go about my work. Wheat-bran and different whole grains are their every-day diet and are the basis of all the rations. Such side dishes or extras as meat, milk and green foods in the form of beets, cabbages and alfalfa, are provided for them in season. In the morning I throw down a mixture of whole grains in the litter on the floor. That takes me only a few minutes and will keep the fowls scratching all the forenoon. In winter I feed something warm at noon, which may be cooked meat and vegetables. Corn at night is quite a steady ration, especially during cold weather. All the time the dry mash, shell and grit are kept in hoppers. I try to put the stuff where the hens can get it, and then I know I can depend on their natural instinct to balance their own ration. They will be better fed than if the ration is scientifically compounded."

His Opinion on Setting Hens

Mr. Vandervort has strong convictions on chicken-raising. They are based on ten years' experience. He has given both the incubators and setting hens a chance to show what they can do in comparative tests.

"The setting hen," he said, "does the best for me. The old reliable hen will hatch the eggs and take care of the chicks with less watching than a non-intelligent machine, and she doesn't make a mistake if I don't have her in mind all the time; then I had rather risk the hen with valuable eggs. She has made with me the reputation of giving me more and stronger chicks, especially more show birds; still I use incubators if the hens are not ready when the time comes for the incubation of eggs."

He then brought his books and showed me the following records for one year:

RECEIPTS

	Value
Eggs sold	\$650
Stock sold for breeding purposes.....	400
Cull stock	100
Prize-money net	50
Eggs and fowls used in family.....	50
Total	\$1,250

EXPENSES

Feed purchased for 300 hens, including grain, milk and meat	\$300
Stock purchased from breeders.....	25
Insurance and interest on investment.....	50
Total	\$375

This makes Mr. Vandervort's salary for a small part of the day spent with hens \$900.

If a reader can find in this article the answer to the question at the beginning, I shall feel it may help him to solve his problem of working up from a fifty-cent to a three-dollar revenue hen, and perhaps he will see that Mr. Vandervort got at the very foundation of his success when he said, "I loved the chickens." This is the question to ask yourself when thinking about this three-dollar profit, "Do I like hens?"

The hen, the farmer, the parcel post and the savings bank are all good friends.

The strength of an eggshell is no greater than the amount of mineral matter in the feed.

A damp hen-house keeps company with poultry pests rather than poultry profits.

Exterminating the Chicken-Mite

By Mabel Phillips

THE time is at hand when many people turn their poultry out to roost in the trees rather than try to rid their poultry-quarters of the little chicken-mites that seem to swarm everywhere, even to taking the life of the setting hen if she persists in staying by her nest.

My poultry-house is always ready for the young chicks as fast as they grow old enough to roost, by simply applying boiling-hot meat-brine, or as a substitute a brine made of equal strength applied to every crack and crevice of the walls, perches and nests.

If this is thoroughly done it will completely route the chicken-mite for a whole season.

I slake lime with the hot brine and add an ounce of crude carbolic acid to every ten or twelve quarts of the mixture, which purifies and disinfects at the same time.

This hot briny mixture soaks into the wood and stays there, and no mite will ever crawl over or breed in wood where it has been applied.

This work should be done in the morning and the roosts allowed to dry, else the poultry will have sore feet.

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N OLD friend called on me the other day, and we talked about farming, politics, orcharding, tariff, the

Department of Agriculture, co-operation, the Balkan war, the futurists and goodness knows what else. He had plenty of time to talk and was interested in about everything. Finally I observed:

"Do you recollect, Lupton, how you and I got acquainted?"

"Yes," he said; "it was when I was a clerk at the Interstate Commerce Commission."

"And your coat was always out at the elbows," I interjected unfeelingly.

"And mostly I didn't have a cent in my trousers," he added, laughing.

It's mighty easy to be cheerful about those old times, if the new times are more prosperous. Lupton was very cheerful. He dragged out of his pocket and handed me a cablegram from Glasgow.

"Apples sold at seventeen shillings sixpence," it read. "Per barrel?" I asked.

"Yes; I had three thousand barrels in that consignment," he said. "They'll net me"—this is my recollection of the figure—"about \$3.25 a barrel."

Lupton's story is worth telling, and here it goes. He's a native Virginian, of the Shenandoah Valley garden spot, just a little the loveliest piece of agricultural country I ever laid eyes on. It fed the Confederate armies in Virginia for years, and then Sheridan made good his vow to fix it so that a crow couldn't fly down it without packing his rations. When the war ended, that wonderful farming region was well nigh a desert; it had to be made over from the beginning.

A Ten-Dollar Bill Was a Stranger to Them

Lupton was born about the time the war ended, and grew up in that country, poor like the rest. He couldn't get enough money together to get a new start, and, after serving a term in the Virginia State Senate, he got an appointment as a government clerk in Washington. He was in the Treasury, at \$900 a year, which is just over the subsistence line, in Washington.

"When we came to Washington," Lupton once told me, "we rented a little house and moved in. We had two children and nothing else to speak of except some debts back at home. As soon as we got our stuff into the house we concluded to have the gas turned on. Mrs. Lupton went down to the gas office to get it done; but coming home at night I noticed that there was no gas. I asked why.

"They wanted me to deposit ten dollars before they'd turn it on," she said. Then she laughed, and so did I. There hadn't been ten dollars in the family at one time since either of us could remember. There wasn't likely to be for a long time in the future, either, so far as concerned a deposit for the purpose of getting gas turned on. We cleaned up the kerosene-lamps and decided to struggle along without gas. We did too; it was two years before we had the gas turned on."

It was hard sledding, paying as much as possible on the old debts and living within the family income. But the Luptons had made up their minds to do it, and they succeeded.

Down at the Treasury Lupton shared a desk with an old-time clerk who dressed a good deal better than Lupton could. They became friends. The friend knew of Lupton's financial condition and took an interest in him.

At this period it was the dream of Lupton's life to get back to Virginia and start an apple-orchard. Lupton studied apples, read apples, talked apples, dreamed apples; did about everything except eat them. They were too expensive for that. He talked to his friend and desk-mate almost endlessly about what he was learning about apples. He was going to start in as soon as he had a few thousand dollars saved; which he might accomplish by the time he was a hundred years or thereabouts.

"Lupton," said his friend one day, "what do you say to my staking you to get that orchard started?"

"Have you got the money to do it?" asked Lupton.

Then the story came out. The seat-mate, though he looked like any other government clerk, was in fact quite different: he had real money. It had been left to him,

Hon. S. L. Lupton, Farmer, Helps Senator Hoke Smith to Teach the House Committee Agriculture

By Judson C. Welliver

in the beginning, by an aunt who had died in Japan. He had taken good care of it, made it grow, had lived modestly and was worth perhaps \$200,000. Lupton hadn't suspected it.

His friend told his story and again demanded to know if Lupton would use some of his money. Lupton guessed he would.

"But," he said, "I may be wrong on this apple dope of mine," he said. "Suppose I am?"

"Well," replied the friend, "you believe in it so strongly that if you had the money of your own you'd go into it?"

"You bet I would," was the prompt reply. "I'd risk every cent; but risking somebody else's is different."

He Knew How to Stretch a Dollar

THEY agreed finally that Lupton was to be grub-staked. He went down around Winchester, in the Valley, and at length bought 150 acres at \$50 an acre. The Treasury friend put up the cash.

Lupton scratched and saved; earned a promotion and at length was transferred to the Interstate Commerce Commission, where he got \$1,400 a year. He studied apples harder than ever, and presently started planting his orchard. He didn't do it quite as anybody else would have done. He had a tremendous lot of theories.

He always took his annual vacation at the time when he could make the time count for most at the farm; he made every dollar go as far as it could possibly be stretched, and he knew how to stretch it.

It was during this period of setting out the orchard, and hanging on to it like grim death till it could produce, that I became acquainted with Lupton. He was a good official, having come into a place of some responsibility. I can't refrain from telling a little story to show how carefully he looked after other interests than his orchard.

One Saturday night in the spring of 1908 he burst into my office a few minutes before midnight. I was working late. Lupton was out of breath.

"Can you get to the President quick?" he demanded.

"Not inside of a minute," I laughed. "What's the excitement?"

Then Lupton told me. "Up on the hill," he sputtered, jerking his thumb toward the Capitol, "they've set up a job to kill the appropriation for enforcement of Section 20; you know; going to asphyxiate it; do it in secret; ruin the new Interstate Commerce law; starve it to death before it gets working. Don't you see?"

DON'T make the mistake of assuming that, after all, Lupton got on because he found a friend that grub-staked him. That friend observed that Lupton was living in the city on \$75 a month, supporting a family and every month paying off a little of the old debts. He reckoned that he could afford to take a chance on that sort of citizen, and he didn't make a mistake. There are a great many more ways to stake men like Lupton than there are men like Lupton to be staked.

I had got the point. Section 20 was what many of us regarded the most important feature of the Dolliver-Hepburn act, the section that provided for government inspection and supervision of all accounting business of the railroads. The Commission had asked \$500,000 to begin enforcement of the section. There had been no open opposition to granting it; but Lupton had come into knowledge of the fact that the railroads wanted the appropriation denied, and the Cannon machine in the House was planning to do just that; do it in secret, because that was the only safe way. He told me just what he knew, and I saw that he was entirely correct.

Lupton Knew the Political Game

"THE President needs to know this right away," I admitted. "They've pigeonholed his legislative program for this session; he hasn't got a thing worth while out of committee."

"No," replied Lupton, "and he doesn't need anything so much as a big, popular measure on which he can force them out into the daylight and give 'em a good lickin'. This is the one. Don't you see that if he can organize a big fight on this, let them take the wrong side

and be beaten, he will have broken their back, and he'll be able to force their hand all the way through?"

Lupton, as I observed before, had been a state senator in Virginia. He

knew some real politics. I didn't; but I could see through that millstone when he showed me the hole; and I knew T. Roosevelt would too.

"Will you go to the White House with me after church?" I asked.

"No; you go alone," he said; and I had to.

I told Secretary Loeb about it. He saw it; we told the President. He jumped at it. He almost repeated Lupton's words.

"Get me up a memorandum about the big importance of getting this appropriation right now," he said. That afternoon some of us got together and framed up the memorandum, which went to the President early Monday. He had got more information meanwhile, had summoned and conferred with some of his loyal supporters, and before night had a beautiful fight going.

The big day came; the day for the fight on the floor. It lasted all day, and in the end, with almost a full house, the item was voted into the bill by a majority, I think, of eleven! Roosevelt had won his victory; the organization had been smashed. The session's deadlock on legislation had been picked—with Lupton's idea.

Maybe the story hasn't much to do with orcharding, but it shows the sort of chap Lupton was. Next day he went back to work at his desk, and nobody suspected his part in the big fracas.

Some months thereafter I walked in on him and asked how the orchard was doing. He had expected to get his first crop that season from the first fifty acres of apple-trees.

How He Helped Senator Smith

HE DIDN'T say a word, but pulled out a drawer, took the top letter and handed it to me. It was from a New York commission house and contained a draft for \$14,285, with notice of their acceptance of his proposition to take the apples on the trees and pick them!

"Whew!" I whistled; "going to get a new suit?"

He pulled out another drawer. "I wanted to show you this one, too, ahead of anybody else," handing me another letter. It was his resignation of his government job.

Lupton went down to live on the farm, bought more land, planted more trees, and now has 400 acres in apples. His place is rated worth about \$200,000, but isn't for sale.

Lupton—Hon. S. L. Lupton, Winchester, Virginia—is now president of the Eastern Fruit-Growers' Association and a great booster for co-operative marketing by all kinds of tillers of soil. Last winter he was in Washington, presiding over a meeting of this organization, which covers six States. He learned that Senator Hoke Smith of Georgia had introduced an amendment to the agricultural appropriation bill, to direct a detailed investigation of co-operative work among farmers, with publication of the results and recommendations of methods to extend the system, and to give it the benefit of

government assistance. He called on the Senator to say that he was doing just the right thing. "Can we help you in any way?" he asked.

"Yes, you can," was the prompt reply. "The House committee refuses to stand for that provision. Can you get your association to adopt strong resolutions in favor of it?"

Lupton guessed he could. He brought Senator Smith over to make a speech to the association; then the association did the resolving, and sent a committee headed by Lupton to call on the House Committee of Agriculture and urge that it change its mind.

The Lupton emissaries had to fight for a hearing, but they got it. Lupton talked the House committee and himself black in the face. When he was done the committee reversed its former action and inserted that item in the bill! It became law; and under it the Department prepared the report on co-operative marketing that we have had so much to say about in FARM AND FIRESIDE.

The thing is only just starting. Such men as Lupton are pushing it all over the country, and men like Hoke Smith are fighting for it in Congress.

What to Plant for Beauty Around the Farm Home

By C. B. Whitehouse and Belle Case Harrington



THE farm home without plantings of shrubbery, flowers and vines is a house to live in, not a home. Although its barren, incomplete look may not have much effect upon the busy owner, his wife cannot say as much, for being a woman she naturally loves pretty things, and most of her life is spent in and about the house. To have a few fine flowering shrubs and vines necessitates small expense, yet they add actual money value to the property. Incidentally they raise the standard of the family in the neighborhood, for if a man is known by the company he keeps he also is judged by the appearance of the home he maintains.

A good stretch of lawn is one of the first things to be desired, and there is no reason why every farm should not have it. But lawn is not enough. Tie the house to the grounds by a few well-selected plantings close to it. At each side of the porch steps place a *Spiraea Van Houttei*, which will grow to a height of four or five feet, and in front of that group a few of the Thunberg barberry. Have the spiraea a foot or two away from the corner formed by the porch and steps, and in front of it, in an irregular planting, set in three or four of the shorter barberry. You will find them very attractive later on. No shrub is more beautiful when in blossom.

At each end of the porch plant a flowering shrub of some sort, either the *Hydrangea paniculata grandiflora*, which bears such fine, large clusters of blossoms and has such a long flowering season, or a group of two or three Japanese rose-bushes, known to the horticulturist as *Rosa rugosa*. These Japanese roses, with their clean, crinkled green leaves, are an ornament without a blossom on them, but they do blossom, heaviest in June and July, continuing until fall, when the roses are followed by huge seed-pods of brilliant red that last most of the winter. The Japanese rose is perfectly hardy in the coldest climate, and the best thing about it is its complete freedom from the pests which infest all other kinds of rose-bushes.

The only practical plantings for the farm home are hardy shrubs and the hardy perennial flowers, free from pests and taking care of themselves after they are established, for just when certain flowering things need spraying and dusting with insect-powders, both men and women on the farm are most busy.

If you like brilliant effects, make a narrow bed, about eighteen inches wide, along the skirts of the porch between the end shrubs and those at the steps, and put in a few roots of hardy perennial phlox of a bright color, setting the plants a foot or more apart. The large trusses of blossoms will add to the picturesque effect of your home, and also are fine for cutting. In fact, the more the flowers are cut during each year's first season of bloom, the more certain they are to have a second crop of blossoms later on in the fall.

For earlier flowers a few bulbs of iris or jonquils, scattered among the phlox-roots, or set just back of them, will amply repay you by their cheerful early blossoms—perhaps the first in the spring in your neighborhood. They will not interfere with the other growing things in the least, and once established will blossom for years. Phlox-roots multiply rapidly. In a season or two the bed will be luxuriantly full, and you will be able to take some roots up to give to your friends.

The Porch Plantings are Most Important

The front and back porch plantings are the most important of all. They are near at hand to be enjoyed, and decidedly improve the house, so if nothing else is done you will be glad in the end to have accomplished that much.

If the yard is fenced and further planting is possible, do not scatter it here and there on the lawn. Try groupings of three or more shrubs in the corners of the fence and along the sides, varying the number of plants in the groups.

Even if the yard is not fenced follow the same plan: place the plantings where a fence naturally would be, and if possible keep the grass cut between the porch plantings and those along the fence. Going over it only two or three times during the summer with the farm mower will do wonders for the appearance of things.

For the outside border my choice would fall among the following: Persian lilac, snowball, white and purple common lilac, mock orange (*Philadelphus coronarius*), goldenleaf elder, hydrangea and flowering almond, the hardy, old-fashioned shrubs our grandmothers loved.

If only one more tree may be added to your home grounds, make it a cut-leaf birch. Plant it near the evergreens if you have them—not too near for its own

health, but near enough to have the eye take them in at one glance for they are charming together.

If you have no evergreens and can plant some, do so by all means. If there are any unpleasant views from your windows, plant some evergreens to shut off the view, or put in some willow-roots this spring, and in two years more nothing but beautiful foliage will meet the eye when you look that way.

The Place for a Border Bed

Three or four feet in front of the fence shrubs is the ideal place for an irregular shaped border bed, or for clumps of the many desirable hardy flowers which need practically no care when once established: peonies in many colors, larkspurs tall and stately, sweet-william with its coloring so like an oriental rug, gorgeous tiger lilies, bleeding-heart, and any other flower you know and love.

If there is a fence, plant a few roots of Concord, or any other good grape which thrives in your locality. Or if the fence is not a safe place for grapes by all means have them somewhere—on a trellis or the back porch. The vines are beautiful, fragrant in blossoming-time, and pay. They are very easily grown, requiring only to be pruned back each year to the usual three or four "arms," that they may bear more heavily.

An occasional stirring of the soil about the roots of



The native elderberry, pruned into shape for the lawn

the new plantings and, unless it is a wet year, an occasional good soaking (not a sprinkling), say a couple of times a week, during their first summer will help them to become firmly established and give them a fifty per cent. better growth. The next year they will practically take care of themselves, though a good mulch of manure each fall will repay you in the blossoms they will send forth.

While many do it, there are many more who do not have the time nor the strength to put in any quantity of annual flower-seeds. The beds require some work to put them in condition, and the seedlings when first out of the ground usually require thinning or transplanting and weeding, all of which is backaching work. Three annual flowers which, personally, I am perfectly willing to put in a little labor on, although our farm is a very busy place, are pansies, poppies and the gladioli. The pansy might almost be called a perennial, and a thriving poppy bed or border will nearly always seed itself for the second year. After that they will have to be replanted, but I always feel recompensed for my trouble.

The work of planting gladioli bulbs in the spring, and pulling and storing them in the fall, is a thousand times repaid by the glorious spikes of blossoms they will send forth for so many weeks. No other flower equals them for generous flowering, the beauty of their blossoms in the garden, and the ease of their culture.

If one has no money at all to spend upon the home

surroundings, use native shrubs and vines. Few realize how much can be done with them. Naturally more hardy than the cultivated varieties and with soil and climate similar to their native habitat, they give excellent results and add much to the beauty of the place.

Among vines there is probably nothing which gives more delight than the native American or five-leaved ivy, which differs from the poison variety in that its leaves have five parts instead of three. This ivy transforms a porch into a shady bower, and it is particularly useful in covering unsightly fences, buildings or stumps. It makes a clean, rapid growth, is free from insect pests and becomes a mass of brilliant coloring in the autumn. The only coaxing it requires is an abundance of water the first year after it is transplanted.

Wild Clematis is a Lovely Vine

The wild clematis, sometimes called traveler's-joy, or virgin's-bower, is quite as beautiful as its cultivated sister, *Clematis paniculata*, and has the added advantage of the beautiful feathery seed-pods which last half the winter. This wild clematis is found festooning itself from fence-posts and broken tree-trunks in many sections of the Middle West, and makes one of the most satisfactory porch vines to be found.

Another vine is the wild grape, whose grace and beauty the professional landscape gardener has been quick to see and utilize. The filmy white blooms of early spring possess an exquisite fragrance, and in the autumn a luxuriant growth supports the tiny bunches of grapes which are quite as ornamental as flowers. This vine will thrive in shady situations where the cultivated grape would be a complete failure. It is particularly good when planted over a well-house, or made to cover an unsightly fence.

Bittersweet, with its clusters of red and gold seed-pods which hang on the vines most of the winter, is a beautiful vine, but a slower grower than either the grape or clematis. Neither does it furnish as much shade, but it is very pretty grown with the others.

At the time of planting the roots of these desirable hardy vines, sow a few seeds of an ornamental gourd-vine or wild cucumber for a viney effect the first year. They will not be needed the second year.

In almost any wooded district plenty of elderberry and golden willow may be had for the digging, and very effective groups of shrubbery or trimmed hedges they make too. The elderberry, if not so common, would be considered extremely beautiful when loaded with its large, flat-topped clusters of white fragrant blossoms, followed later by the berries which the birds love so well. It is an obligingly rapid grower where a screen is needed, and will stand for any amount of pruning if a low hedge is wanted.

The sumac, so much used in wildwood scenery simulated in the city parks, is attractive throughout the summer. The graceful foliage, surmounted by the rich red "bobs," becomes a mass of riotous color in September. The sumac is excellent for massing in an otherwise unsightly corner or for use as a screening hedge, the only drawback being that it sheds its leaves early in the fall.

For a handsome lawn tree of small size try the dogwood with its showy white blossoms in May. To offset this, plant an Indian wahoo, or burning-bush, and the bright orange-red seed-panicles will set off your yard till the beginning of winter.

A Violet Corner Important

Be sure to have a violet corner. Make the soil rather rich, and the great purple violets, ten times more attractive than those the florist grows, will gladden the early spring.

Then plant trilliums in front of the porch or against the side wall. They will be out before the violets are gone, and their snowy beauty will lead more than one passer-by to stop and admire. The trillium grows only in leaf-mold, and it will be necessary to bring some wood-soil when they are transplanted.

Bring enough, too, for a fern-bed. Put it on the shady side of the house where nothing ever does well. Wall in the bed with stones, and let a covering of leaves rot upon the bed each winter. Put in some of the hardier "brakes" for a background, then the finer ferns and the maidenhair if it can be obtained.

The roadside purple asters with yellow centers are now coming to be appreciated for their real beauty, and one specialist in hardy annuals has improved and propagated until he now advertises twenty varieties. Planted in clumps, nothing is prettier than their regal royal purple. Beside the asters plant a clump of the vivid orange pleurisy-root (*Asclepias tuberosa*), also called butterfly-weed, and you will have a color-scheme to delight the eye of all who see it.



This wild grape-vine makes an attractive trellis between chicken-yard and lawn



American ivy transforms this porch into a cozy summer nook



The wild clematis has a decorative value which is all its own

Letty Meets the Art of Life

By E. T. Royle



LETTY wrote vigorously in her diary, the customary line a day expanding indefinitely. It was a Sunday evening in late spring, when tender buds threw a haze of soft green over the willows, and gave a tinge of gold to the marigolds in the swamp.

"You must have a lot to tell about one dull Sunday," remarked Letty's Aunt Anna, who mothered the family and the farm with impartial justice.

"I'm writing up my diary for all next week," responded Letty, as snappily as a really nice girl would permit herself to speak.

"Well!" responded her aunt, "since when did you learn to read the future?"

"Reading the future is the easiest thing in the world, if you live on a farm where nothing ever happens, two miles out of a stodgy little town where nothing ever could happen," replied Letty, opening the pages of her diary like a fan. "Of course I don't expect real thrills, but I've looked back through the past six weeks, and I could run one week into another without making a ripple, except one Wednesday that stands right out because something happened at last: the rain leaked through the attic roof into the box where I keep my summer hat. That was thrilling!"

"When you come to my age," responded Aunt Anna unsympathetically, "you'll be thankful for busy, restful days when things don't happen," a statement that would have been more impressive if Mrs. Story had passed through a life of storm and stress before reaching the peaceful haven of Westerling Farm. As it was, Letty permitted herself a slight sniff, and wrote in next Thursday's diary: "Packed eggs—read county paper—put away maple syrup."

"You'd be in a hole, Sis, if the hens went on a strike and an earthquake struck the *Weekly Argus*," remarked her younger brother, who had been sufficiently interested to look over her shoulder.

"Then I really would have something to write about," said Letty, with a sisterly pull at Eddy's red hair. "As it is, I know we'll wash to-morrow, and Mrs. Wickens will tell us for the fifty-leventh time that she only goes out to oblige people, and I'll have to hang out because it's too muddy for her to risk her 'neuralagy,' and Tuesday we'll iron and have baked beans and a baked Indian pudding, and Wednesday we'll have the last of Sunday's roast made into Irish stew or soup (if you keep on eating the way you did at dinner, there won't even be bones for soup, Eddy), and Thursday I'll go to prayer meeting if it isn't too bad to take a horse out, and Friday I'll sweep and set bread and have to stay home from choir practice because it's frozen too hard or thawed too soft, and Saturday I'll bake and clean up and get ready for a nice, peaceful Sunday, after the mad excitement of the week."

"If that isn't just like a girl," remarked Eddy. "Why don't you go ahead and make things happen? Now, if I took hold of that diary I'd whirl in something new every day, if it wasn't anything more than inventing beanless baked beans, or some new dewdab in fancy-work."

"Eddy, you're such a peach of a housekeeper that I think I'll let you make my next angel cake while I go out and break the sorrel colt," responded Letty, as she picked up her diary and slowly trailed up-stairs, while Eddy, merely reflecting from the boundless experience of his fifteen years that all girls were queer, settled down luxuriously with a plate of apples and "Two Years Before the Mast," until Aunt Anna sent him reluctantly to bed.

Letty's antedated diary was entirely accurate as to Mrs. Wickens and her cherished "neuralagy." Even the Monday's bill of fare bore out her prognostications, though Aunt Anna's unhappy adventure with an explosive bottle of tomato catsup, which bathed the indignant housekeeper and the pantry with sanguinary billows,—gallons of it, apparently, contained in one small bottle,—was really the unexpected. Tuesday brought ironing, and as one can't diversify ironing very much without scorching shirt-waists or lumping starch, Letty felt quite sure that here again was the same familiar round. It is true that her aunt ostentatiously prepared brown Betty and spaghetti with cheese, instead of the beans and Indian pudding that Letty had predicted, but that was not really exciting. She was wishing for the twentieth time that she hadn't put braided panels in her linen skirt, and trying to press out the braiding from the wrong side without drying out all the rest of the skirt, when Eddy appeared, remarking, with his mouth full of cruller:

"Did you hear about that old dominie from town that's rented the Snellgrove place?"

"I heard some kind of a minister was coming, and dear knows some of us need one."

"Well, he's Episcopal, and I guess his folks have turned him out to grass. He isn't preaching any more, but he's got the dandiest microscope you ever saw."

"I never saw any microscope, except in pictures," said Letty rather tartly.

"Well, here's your chance," responded Eddy. "I'm going up there to-night with some of the fellows to see it, and the dominie said that if we had any sisters we could bring 'em along too."

Now, in a big city, with public school free lectures on everything under the sun, a microscope is no novelty, and plenty of young people acquire a superficial familiarity with science that breeds contempt toward real knowledge. Healthy-minded young people in the country, however, do not look at life from the moving-picture standpoint, and, her ironing finished, Letty changed her dress with a sense of gaiety that made her erase one discontented line from her diary.

The old Snellgrove place had been shorn of so much of its acreage that its renting had been a difficult mat-



There were low bookcases, and a few pieces of quaint pottery

ter, especially as "old lady Snellgrove," to use the neighborhood expression, insisted on going with it. The average renter of a run-down farm does not care to inherit a rather opinionated boarder too, so the farm had reverted to golden-rod and daisies, while Mrs. Snellgrove continued to live in one corner of the old house and raise the earliest broilers in the vicinity, in spite of the general prediction that she would probably fall down cellar or have a stroke all alone some day, without a neighbor knowing anything about it. However, the Reverend Doctor Axtun, dispossessed from the pleasant rectory he had occupied for a generation, by the dictum that made him rector emeritus, had fallen in love with the old house, and being, as local gossips explained, a "lone widower man," Mrs. Snellgrove's determination to remain in the house proved very helpful; for, though she was generally described as pernickety of temper, her housekeeping was quite up to Solomon's standard.

When the young people filed into the living-room, the various girls looked at one another for a moment, while Letty decided, with lightning rapidity, that certain useless pieces of miscellaneous "fancy-work" that adorned the family "parlor" should be packed away the next morning. Mrs. Snellgrove's rag rugs were on the bare floor, but her "golden-oak parlor suite," with plush upholstery, had been retired; instead there were solid library tables and Canton chairs, into which the boys sank with an air of solid comfort. The flowery wall-covering had been replaced by golden-brown cartridge paper, the grained and varnished woodwork was now ivory white, and there were low bookcases, a few pieces of quaint pottery and a number of prints in plain dark frames.

"It looks, somehow, like a society picture in a magazine," whispered Lora Matthews to Letty, "but it's terribly plain."

It was plain, and none of the young visitors realized the value of mezzotints and Belleek, though several of the boys reminded their sisters afterward that it wasn't stylish to clutter up a room so that fellows couldn't take any pleasure in it, and that was why the domestic-science department of the state college was called on, later, for advice as to the study of home-decoration.

That evening was fully entitled to the space Letty gave it in her diary, which lapped right over from Wednesday into Thursday. Mrs. Snellgrove sat there knitting at her shell-pattern bed-cover, while Doctor Axtun, whose round collar and ecclesiastical waistcoat caused a very slight constraint at first, called on the boys to help him in placing his big microscope and arranging the lights.

"Who ever thought that a honey-bee had such claws?" remarked Lon Matthews, whose fancy for bee-keeping had been rather discouraged by a grain-farming father.

"Well, I didn't know that butterfly-wings were covered with scales," remarked Myrtle Deering, "and who'd have thought that yellow stuff in willow-catkins was anything but dust?"

The young people had moved into the dining-room, where Mrs. Snellgrove's dark old furniture had dwelt in the perpetual twilight of gray paint and a tapestry wall-paper chosen because it "wouldn't show dirt." Pumpkin-yellow paper and white paint had transformed the chilly north room, in which the old furniture now showed its rich color and nobly simple lines. There was a cheerful bustle in the kitchen, where the boys were offering their help with the coffee, while the girls arranged the plates of cookies and baskets of fruit. Letty's eye was attracted by a carved wooden nut-bowl, and Doctor Axtun explained to her something of the wood-carving done by the Swiss, Austrian and Bavarian peasants. It was a revelation to her that men and

women might milk and plow and mow, might live in hardship and poverty, and yet translate their humble lives into enduring art.

"But I always thought those old-country immigrants who come here so ignorant," she said. "We have to teach them everything, and yet most of us wouldn't even see the sense of copying real oak-leaves in wood."

Letty thought about the nut-bowl several times before the little feast was over. It made as strong an impression on her as the bee's foot did upon Lon Matthews. It was a somewhat hesitating query from Lon that gave her courage to ask further light, and when she went home she carried under her arm a wonderful book, borrowed from Doctor Axtun's shelves, which pictured peasant art in some of the older countries. It was the churching shawls and caps of strange provinces of which Letty hardly knew the names—Slavonia, Croatia, Ruthenia—that first made her dissatisfied with the crude blossoms she was outlining on a silk pillow-top.

"Here I'm spending my time doing embroidery that might just as well be machine-made, when a lot of women who can barely read and write do work that gets into a book because it's peasant art," she complained.

"Well," remarked her aunt cheerfully, "if you want to do work like those foreigners, better start studying Great-Grandma Waring's sampler and bedspread; they're up in the attic."

Letty thought, with a sudden blush, of the time she had used Grandma Waring's sampler for a carpet in an egg-box doll-house, and of various "dressings up" in which the bedspread of homespun flax with its cross-stitch border had figured. She blushed for those dark ages in which these heirlooms were merely "old truck," and without honor as works of art. She looked at the rescued sampler with respect, but no admiration; it had a lacrymose weeping willow and a high-shouldered lady in the foreground, and a distant view of dumpling-like sheep in a very green meadow. The bedspread, soiled and tattered, with cross-stitch border, she could more readily admire, with its soft blue and fawn design on the unbleached linen.

"They're beautiful," said Doctor Axtun, who was shown these resurrected treasures. "You see, they're pure vegetable dyes—indigo, butternut, oak and various lichens such as the handicraft workers are now reviving."

"Do you mean," asked Letty with some hesitation, "that nowadays, when we can buy such heaps of pretty things made in factories, people are really going back to the things country people made by hand years ago?"

"Child," said the old clergyman rather solemnly, "don't you know that the only enduring art is the expression of some worker's ideal?" Moved by the girl's interest, he went on to talk of the revived colonial handicrafts in New England, the hand-woven bedspreads of the South and the handicraft workers in wood and metal who have found their inspiration in medieval Europe. That was outside of Letty's interests, though it recalled the old French blacksmith, down at the cross-roads, who diverted himself in his leisure by hammering out wonderfully intricate hinges, locks and latches, which, as one of the neighbors said, were "pooty fancy, but nothin' like as neat as factory made." But there was a sudden intuition, a flashing thought, that was to change all Letty's future and take away forever the feeling that nothing could happen in the country.

"Aunt Anna," said Letty the next day, "do you mind if I hitch up right after dinner and go down the creek road to see old Mrs. Van Eeden?"

"Why, that's a real nice idea, Letty," responded her aunt. "It isn't often any of the young folks go over to see her, and she'll like it. She wanted a trio of our guineas too; it's lucky Eddy penned some last night, thinking they were ready for them over at Matthews'. Lon just 'phoned over that they aren't fixed for them to-day."

So as soon as the dinner things were set away behold Letty and her friend Persis Horton starting off in the buckboard with the crate of pessimistic guineas fastened on behind and Persis holding a jar of Mrs. Story's special mustard pickle, after the good old country fashion that forbids one from visiting an old neighbor empty-handed.

It must not be imagined that Mrs. Van Eeden was some poor old soul to whom the girls' visit came as one glint of sunshine in a dark and poverty-stricken existence. On the contrary, she was, as her hired men asserted, "richer'n mud"—she owned three farms and a prize herd. And while she had, as one man who traded cows with her observed, a tongue you could clip a hedge with she also had as much kindness as shrewdness and enough "faculty" to set them both off. The girls chaperoned the guineas into the enclosure which was to be their home until they were "wonted" to their new surroundings, then viewed the brooders and admired the latest calves until Mrs. Van Eeden said she was going to cut her last fruit-cake for their delectation. It was the sight of an old blue-and-white bedspread thrown over a couch that enabled Letty to bring up the subject she really wanted to talk about.

"Why, yes," responded her hostess to Letty's query, "that's one of the bedspreads Father Van Eeden wove on his hand loom, and I've got three pair of sheets to go with it. The flax was raised right on this farm, and hackled and spun by Mother Van Eeden, and wove right in this room over by that north window, and a messy thing the old loom was to have right in a body's kitchen. And those sheets are just as strong as the day they were made, too, if they ain't quite as fine and white as boughten ones."

It was while fingering the sheets, silken in sheen, with the dull creamy tint of the natural flax, that Letty began to talk, rather hesitatingly, of the old-fashioned needle-work that possessed her mind. [CONCLUDED ON PAGE 26]

Some Simple Bird-Houses

By A. E. Swoyer

THOSE who appreciate the value of birds, not only as songsters, but as destroyers of insect life as well, will endeavor to keep them about the garden-plot. To do this successfully requires the building of suitable bird-houses, protection against their natural enemies and perhaps occasional feeding. Of these three things the construction of proper homes is the only one in which instruction is needed, for these must not only be correctly designed in order to afford the necessary protection, but may be made ornamental as well. A standard type is the cottage illustrated; this is designed as a double house, is so simple that any boy can make it and, when nicely painted, is very attractive.

To make this cottage, secure, first, a piece of one-inch board eighteen inches

The ends, however, require doorways, although the partition does not; therefore remove the narrowest of the three pieces, and cut the door and ventilating holes shown in the other two. The door should not be too large; one two inches square is about right for general use; it may be laid out with a try-square, the two side cuts made with a saw and the piece removed with a chisel. The ventilation openings should be bored with a one-inch auger, but if this is not at hand smaller holes may be bored with a bit and brace. The sides of the house are pieces of half-inch wood, each eleven inches long and six inches wide; after they are cut you are ready to set up the frame.

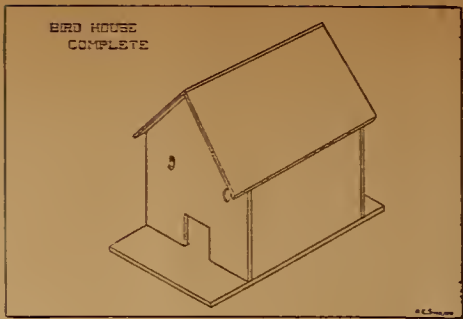
Nail the two end pieces to the sides with small wire finishing-nails, being careful not to mar the wood; this is best avoided by the use of a nail-set, by means of which the heads may be countersunk. This done, fit the partition in the same manner, and fasten the frame to the base by means of larger nails driven through the latter and into the sides and ends. Needless to say, the frame should be

sides; as the upright pieces were not beveled to make an exact fit, this overhang is necessary to make the house water-tight. The house is now complete and may be painted, if desired; paint adds to its appearance and to its durability. When the paint is dry, the cottage may be fixed at the top of a pole ten feet or twelve feet high by means of the brackets shown, which are screwed to both the pole and the bottom of the house.

This simple form of cottage may be elaborated to any extent desired; the roof may be tinned or covered with tiny shingles, a weather-vane may be added, or it may be converted from a "two-family house" into an "apartment" by the simple addition of a floor running from the ends to the partition just under the ventilation openings; such upper floors prove attractive to wrens and to other small birds.

Should you not wish to trouble with the making of a regular house, there are many other contrivances which will prove equally attractive to the birds. Wrens in particular are fond of rough-and-ready affairs, but they insist upon having the entrances as small as possible. For these friendly and tuneful little birds gourds with holes cut in the sides and the pulp removed make fine homes when suspended near the house; if gourds are not available in your locality, small earthenware jugs will do as well, although they are not so ornamental; the opening in the jug may be made with cold-chisel and hammer, care being taken not to crack the affair by attempting to chip away too much at a time. Should you hang either gourd or jug in the orchard instead of near the house, you may be surprised to find that gay southern gentleman, the Baltimore oriole, installed therein.

Martins, too, and others of the swallow family delight in houses having small entrances; these birds, however, live in colonies, and a single apartment may fail to attract them; but as a colony house is easily made this need prove no obstacle. For such an affair secure some small flower-pots and an equal number of squares of tin, each considerably larger than the large end of the pots. From each sheet cut a round opening large enough to allow the pot to enter, but not



so large as to permit the raised rim at the top of pot to slip through. Then break out the opening in the bottom of each pot to the proper size, and the nests are ready for setting up. They may be located on a frame fastened to a post, or nailed to the walls of house or barn; in the latter case they are best placed directly under the eaves. To fasten, slip a sheet of tin over the end of a flower-pot and nail to wall.

The ideas given here are not the only ones which may be used; they will serve, however, to stimulate your own ingenuity.

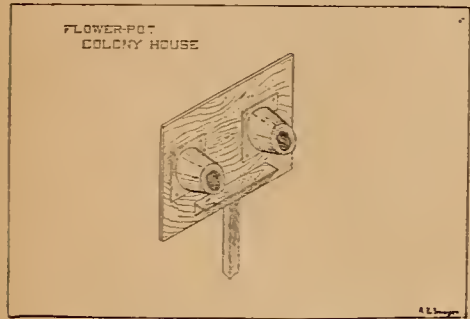
The "Annual" Church Dinner

By Mrs. Portia Blackstone

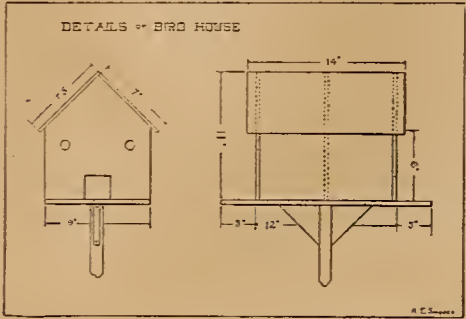
WE HAVE in our church an annual dinner at which twelve tables are arranged, and rising from floral decorations in the center is a banner with the name of a month of the year on it. There is a blank book on each table with a card on the cover asking each guest to write his name and address, also his birthday date. Those born in January are asked to sit at the January table, those born in February at the February table, those born in March at the March table, etc.

The blank books are preserved by the Ladies' Aid Society, which appoints a committee to send a post-card to each address on the birth-date given. A lady born in February is to send to the February names, etc. The cards are all alike and have a fine colored picture of the church and a printed announcement of the Sunday services. A birthday greeting is written on it when the card is mailed.

Our committee on table decorations includes twelve members. A lady born in March is given charge of the March table, etc. Each one promises to have a potted plant for the center of her table, and many are already potting the plants that they may be as near perfection as possible on the day they are to be used.



long and nine inches wide; this is the base, or bottom. Then take two pieces of one-half-inch lumber eleven inches long and nine inches wide, and one piece of the same thickness and length, but one inch narrower, and nail them lightly together; the edges of the two larger boards should be flush, and those of the smaller piece one-half inch in. Measure up from one end a distance of six inches, and mark this point on each of the side edges; then find the center of the opposite end and mark it; lines drawn from the two side points to this center will lie at approximately forty-five degrees and will mark the slope of the roof. Without separating the boards, saw along these lines, and you will have not only the two ends of the cottage, but the center partition as well.



placed in the center of the base, which will allow of a three-inch rest and feeding-board at either end.

All is now ready for the roof, which is formed of two pieces of half-inch board, one seven inches by fourteen inches, and the other seven and one-half by fourteen inches; these are nailed together at right angles along one edge, as shown in the drawings. This roof is now set upon the frame and nailed to the ends and to the partition; if properly made, there will be a one-inch overhang at both ends and



How to Win "Duke"

No child owns a handsomer or more desirable outfit than "Duke" and his elegant buggy and harness. You couldn't have a more handsome outfit if you were a little millionaire. You will have every reason to be the proudest and happiest child in the land if you win him. FARM AND FIRESIDE has sent ponies to boys and girls in almost every state in the Union. Just as soon as you become a member of the Pony Club, you will have the best kind of a chance to win "Duke" or one of the other ponies. The thing for you to do right away is to send your name and address to the Pony Man, FARM AND FIRESIDE, Springfield, Ohio, so that he can tell you how to become a member of the Pony Club and a sure Prize-Winner. The Pony Man will send you a big list of other lucky boys and girls who have won ponies and show you just how to become a full-fledged member of this splendid club.

How to Join the Pony Club

Simply write your name and address on any piece of paper and send to the Pony Man, FARM AND FIRESIDE, Springfield, Ohio, or fill out the below coupon and send it along. Do this right away. Hurry. Now is the time to act, if you want to win "Duke."

Send us this coupon or use a postal card

Dear Pony Man:—I would like to win "Duke" and wish you would tell me how to become a member of the FARM AND FIRESIDE Pony Club and send me a Membership Certificate so that I can join the club right away.

Name.....
Town.....
R. F. D..... State.....

YOU CAN WIN "DUKE"

But You Must Send in Your Name To-day

This is "Duke," the most beautiful Shetland pony you ever saw. He is chestnut, with shiny hair and the fluffiest, silkiest mane and tail in the world. He is about 42 inches high and weighs 350 pounds, and can trot faster than lots of carriage horses. He just loves children too, and you will soon find that he will follow you around just like a big dog. "Duke" will soon be given to some lucky boy or girl by FARM AND FIRESIDE, the National Farm Paper. Every year we give ponies and other handsome prizes to boys and girls just to advertise the paper. You will never have a better chance to win a pony than you have to-day, but you must send your name to the Pony Man at once. You can get "Duke" and his splendid buggy and nickel-plated harness delivered to your very door without spending one cent of your own money, if you only try hard enough.

Three Handsome Ponies and Outfits 500 Magnificent Grand Prizes

A Prize for Every Member of the Pony Club

Just as soon as the Pony Man finds out that you want to win "Duke" he will send you a Membership Certificate together with pictures of "Duke" and the other ponies and prizes, and show you just how to become a member of the FARM AND FIRESIDE Pony Club. Every member of this wonderful club gets a prize. FARM AND FIRESIDE is one of the oldest and best farm papers. You are absolutely safe in accepting the promise of this big and long-established paper. Besides "Duke" and his outfit, two more complete outfits will be given to the second and third best members of the Pony Club.



This is "Duke" With His Buggy and Harness

PONY MAN, FARM AND FIRESIDE, SPRINGFIELD, OHIO



What Three Women Did To Make a Good Living Without Going to the City

By Anna Van Rensselaer Morris



A Northwest Home Bakery

"OH, FOR a loaf of good bread! That remark, made by a bachelor homesteader prompted me to start a home bakery," said a woman who has built up a flourishing business as a baker of bread and pastries. "We had very little capital when we took up our quarter-section in this Pacific Northwest region, and the fact that my husband was working twelve hours a day out-of-doors while I, with plenty of time and strength, was not earning a penny to help along was a constant worry. Is it any wonder that as soon as I could get that bachelor homesteader's attention that I offered to provide him, at moderate prices, with all the bakery supplies that he needed? He gladly gave a weekly order for four loaves of bread at ten cents each and for two pies at twenty-five cents apiece, for which he was to call on specified days. The second time that man came for his bread he brought orders from two of his neighbors, also bachelor settlers, and through those three men the news that I would do extra baking spread like an endless-chain letter. Within a month I had eight customers and was regularly making three dollars and a half a week."

"My next step was to nail to a tree, at the side of the road passing our shack, a board stating that I was prepared to furnish bread, biscuit, cake and pies in moderate quantities, at forty-eight hours' notice, or to take orders for weekly supplies in the bakery line. It was amazing the way the orders came in, not only from the men of the vicinity who are their own housekeepers, but from women who are indifferent bakers or encumbered with large families of small children. Before many days, orders began to come from people who wanted the things done up so that the rural letter-carrier, who in sparsely settled districts uses a two-horse wagon, could pick them up as he passed our house and leave them at their homesteads or at the place where their mail was customarily deposited. As the mail-carrier received ten cents for each of these packages, it is not surprising that, whenever possible, he should have voluntarily advertised my wares. I had only to pack the orders in the cardboard boxes—cheap enough when purchased by the gross—such as city bakers use, direct them clearly and have them ready when the mail-man passed, and he assumed the rest of the responsibility. But with the cost of delivery added my wares were so expensive to the consumers that there was always a possibility of losing these distant customers. While I was wondering what could be done to obviate this transportation cost, the domestic parcel post was installed, and since then my business has increased by leaps and bounds."

"After several experiments in packing for the post, I found that loaves of bread, wrapped in waxed sheets and fitted snugly into heavy cardboard boxes, travel safely, but that cakes and pies should be put into larger boxes and the empty spaces filled in with layers of thin cotton. Thus packed they are not liable to get broken, and any slight moisture oozing from them is absorbed by the padding. Of course the postal regulations must be carefully studied that the country baker may know absolutely what may be legally sent through Uncle Sam's representatives. All fillings likely to liquefy or become rancid must be tabooed, and any pie less firm of character than apple or mince should be sent in a tin box having no sharp corners likely to injure other parcels in the post. By this new arrangement the consumers now pay only the fourth-class postage cost of transportation, which I add to the price of the commodity, and this is incomparably smaller than the ten-cent-per-package rate which customers paid formerly."

"My charges for bread, cake and pie are based on the one hundred per cent. profit system. That is to say, having estimated the cost of all materials and the postage or other transportation for each article, I double its price and consider it only fair pay for my time and labor. This matter of prices, however, is one that every country baker must estimate individually, for she must be governed by the cost of fuel and baking materials in her own neighborhood. Because my fuel

is the wood from our own place, the cost of its cutting only need be considered, but that small expense is offset by the price of the baking materials which in all newly settled and remote regions are always high-priced."

"Making bread, cakes and pies for the first eight customers didn't consume much extra time or involve much extra labor, as the work was accomplished in common with my family baking, but when so many other orders came in, I was forced to employ a neighbor's daughter to help with the housework and the mending. Her wages and the cost of her food are subtracted from the one hundred per cent. profit."

"This business, like every other enterprise that is worth while, has its setbacks. Sometimes a batch of bread fails to rise, a cake falls flat or a pie-crust scorches, but most bakings are a success, and with my profits I could live comfortably even had I not a husband and a home. If things continue to prosper at their present rate, I expect next year to build a special baking-room and equip it with an enormous range, table and sink."

"There is no reason why every country neighborhood of, say, a twenty-five-mile radius should not have its woman baker. Of course the business is one which must be patiently worked up, and it would grow more slowly in a thickly settled region than in one where pastry cooks are scarce and bachelor housekeepers plentiful. But in any region it could scarcely fail to be a success, if the work were done only on order, and from my own experience I can say that community baking is a satisfactory business for anyone who has the time, strength and energy to give proper attention to it. And while some women undoubtedly have a natural talent for making bread and pastries, it is an art which any ambitious person can master."

A Country Dealer in Antiques

"FORTUNATELY for me the number of people who are anxious to acquire antique furniture is equaled by the number of people who do not care for it. Between these two sorts I make a comfortable living, for I buy from the one kind and sell to the other kind," explained the young widow of a New Jersey farmer. "Up to twenty-five years ago country people didn't try to follow every new fashion in house-furnishings. They were not affected by the black walnut and enormous mirror style that followed the Civil War, nor by the heavily gilded woods and the imitation tapestry coverings of the early eighties. They continued to use the Queen Anne and Dutch furnishings of their ancestors, but whenever a piece was broken they stored it in an attic or an outhouse and filled its place with something of modern workmanship."

"When I went into this business, I knew that many of my neighbors had antiques that they did not value because of their shabbiness, and with a capital of ten dollars I went in search of my first pieces. I found them—two Windsor chairs and a Queen Anne table—in a barn-loft on the next farm. Each of the chairs had a broken leg, and the top of the table was split through its center, and so eagerly did that farmer accept a three-dollar offer for the lot that I secretly determined to never again set a price upon an antique, but to get the owner to state a valuation. To have those three pieces restored by the village cabinet-maker cost the remainder of my original capital, and a city woman visiting in our neighborhood persuaded me to sell them to her for twenty dollars. She got a bargain and I learned my first lesson: that the person who finds and restores a colonial or other antique should try to get a four hundred per cent.

profit and hold it at a good price until a number of buyers have considered it. An antique does not get stale."

"Nevertheless that first customer made up for the advantage which she took of my ignorance by giving me some worthwhile advice. She told me not to arrange to divide profits nor to pay a commission to anyone who might help to dispose of an article, but to sell directly to the purchaser, and I've found that method a satisfactory one. The same woman advised me to mail to the wealthy and prominent people of the nearest large cities cards stating the exact location of my home and the easiest way of reaching it by rail. The lists of names were taken from the "blue book" of the cities thus circularized, and it was not long before I began to hear from a fair proportion of those cards. In addition I left cards in as many as possible of the tea-rooms, hotels and manicure parlors of the near-by towns and found that sort of advertising worth while, as one out of every thousand cards so placed has brought a customer."

"Every dollar of the money made from the sale of the first three antiques and fifty borrowed dollars in addition was expended within a month at the auctioning of a deceased neighbor's effects. I bought half of the stuff that was in the attic and the front part of the house and spent weeks getting that assortment of old-fashioned furniture repaired and polished, and I was six months disposing of it. But that investment put me so firmly on my feet, financially, that I've never since been forced to borrow money to carry on this business. In that first large purchase there were several pieces of cherry and red cedar which, when scraped, beeswaxed and rubbed, looked almost as handsome as mahogany. Many small dealers only handle expensive woods like oak, rosewood, ebony and mahogany and affect to despise the cheaper ones. This is a mistake. There are beautiful specimens of colonial cabinetwork in ash, elm, maple, walnut or cherry, some of it in spiral work, dating back to the sixteenth century."

"Any sort of fireplace furnishing is a safe investment, especially if of brass or copper, and if one can afford to tie up a little money indefinitely a colonial mortar, tool-chest or like humble article is worth the buying. I would speculate in a Revolutionary soldier's wooden canteen for water, on the chance that a customer interested in antique army equipment might happen to fancy it."

"At first I paid no attention to old prints on paper or to the printed cottons and linens (toile de Jouy) which came into vogue about 1770. But when strangers began to ask for such things I made a point of seeking them and was astonished at the number of neighbors who possessed quaint, discolored pictures or fabrics printed with large bird, flower and animal designs. Those antiques usually are purchased by women who are furnishing the bedrooms of their summer homes in colonial farmhouse style."

"Antique hand-embroidered English eyeletting is in great demand for modern baby clothes. In their trousseaux the brides of eighty or more years ago usually had several petticoats of this beautiful needlework, and this, when not actually ragged, brings good prices. By inducing my neighbors—now an elastic term including everybody within a fifty-mile radius—to open trunks undisturbed for years, I have secured entire flounces and ruffles of yellow, discolored eyeletting which, when mended and bleached, was almost unrecognizable."

"When a woman is known to be a dealer in antiques, all the neighbors try to help her along. They have a local pride in the success of the enterprise and keep a sharp

lookout for what they term 'old things.' Whenever they see an antique in wood, brass, copper, silver, pewter or pottery; a chintz curtain, a coverlid, a sampler, a piece of embroidery or the remnants of a crêpe shawl, they send me word to go and look at it. Sometimes the 'antique' isn't worth repairing and sometimes the owner declines to part with it—just then. But usually I go back. She may have changed her mind."

"Well it is for the country antique-dealer that in every fairly equipped village library are to be found books on antiques. These volumes should be carefully studied so that the dealer may know all about period furnishings and the difference between the styles in them likely to be found in her neighborhood. For instance, in colonial times the South was influenced by the French fashions which, especially during the reign of Charles II., prevailed in England. Consequently a dealer living below Mason and Dixon's line should not undertake to supply a customer with a specimen of Dutch cabinetwork—the sort used before the Revolutionary War in New York and the middle colonies. On the contrary, the dealer who operates in New England may safely undertake to find pieces of almost any style of furniture used between the sixteenth and nineteenth centuries because the Massachusetts, Connecticut and Rhode Island cabinet-makers and wood-carvers of early times took their inspirations from all periods succeeding the Renaissance."

The Cottage-Cheese Lady

A LITTLE woman, a farmer's wife, has perfected the art of butter-making until her dairy has come to be known throughout the community as headquarters for the best butter that can be made. She always has ready sale for her butter, and because of the rare quality of the product, the neatness with which it is put up and the prompt delivery of it on certain days she sells it all to regular customers who are glad to pay her two cents a pound more for it than she could get at the village store. But in these days all wide-awake farmers try to sell their produce direct to the consumers, so this is nothing new, and anyway it is not the story I started out to tell."

This little woman, who loves her dairy, has worked up another trade among the customers whom she has pleased so well with butter, and they now look forward with double eagerness to "butter day," for they know that along with the roll of firm, yellow butter will come a jar of delicious cottage cheese all ready for the table."

This cottage cheese—otherwise known as Dutch cheese, or "schmier-käse"—is made of sour skim-milk, which is set on the back of the kitchen-range and allowed to heat gradually until it separates, but is not allowed to boil. When the whey is all separated from the curd it is put into a clean white muslin bag and drained. When cold the cheese is emptied out into a bowl or granite basin and mashed fine with a wire potato-masher or large granite spoon. Then it is seasoned with sweet cream, salt and pepper and put into jars ready for delivery."

This cheese is delicious and the customers gladly pay twenty cents a pint for it. Some of them, however, prefer to buy it plain and season it themselves, and they pay only fifteen cents a pint for theirs."

This pin-money business in cottage cheese began with an order from a lady who was going to entertain at luncheon, and, knowing our friend's ability to prepare this delectable dish for her own family, asked her to bring a quart of it with her next roll of butter. This was mixed with chopped nuts, made into balls, garnished with preserved cherries and served on crisp lettuce-leaves. The salad proved to be so popular that the following week several of the guests at the lunch on sent in their orders for cottage cheese."

I have been told by the little woman herself that the secret of good cottage cheese is in making it before the milk gets too old and also in keeping the milk in granite or earthenware vessels to prevent that metallic twang which results from the contact of the lactic acid with metal. She tells me too that she cannot begin to supply all the customers she could have, and this is because she never makes anything of an inferior quality."



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10 DAYS FREE TRIAL "Ranger" bicycle. Not a cent cost to you if you do not wish to keep it after riding it for 10 days and putting it to every test. Our "Ranger" bicycles are of such high quality, handsome appearance and low price that we are willing to ship to you, prepaid, for your examination and trial, and leave it entirely to you whether you wish to keep it or not.

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Write to-day. Address **FARM AND FIRESIDE** Springfield, Ohio

Decorating Linens with Cross-Stitch

By Evaline Holbrook

HOUSEHOLD linens decorated with cross-stitch are now so popular that few pieces appear without it. It is used on all linens for all purposes—sheets, pillow-cases, bedspreads, towels, table and dresser appointments, and many of the old patterns of a century ago, too lovely to be buried under the dust of ages, are being revived.

The designs may be embroidered in one color or in several colors, as the needlewoman chooses, and many delightful and original effects are secured by using up odds and ends of material in some clever way.

Two Unusual Patterns

Upon the scarf and square tea-cloth pictured on this page two unusual cross-stitch designs are used. They are simple and attractive, and have that quaintness which made the cross-stitch work done by our grandmothers so beautiful.

The design on the scarf end is made in two shades of green and two shades of brown, and the pattern and the key given below will show how each stitch is colored.

The scarf is white linen, and the cross-stitch work is done through cross-stitch canvas. This canvas can be had in most of the large shops and sells for about twenty-five cents a yard. A piece of the canvas large enough for the pattern is basted over the linen where the design is to be worked. One must be careful to have the canvas straight and to baste it in place with small stitches so that it does not slip while the cross-stitch design is being worked.

Working Through Canvas

When working through cross-stitch canvas, use a mercerized thread, not silk, as the latter catches in the canvas and roughs up. Work the stitches of the cross-stitch design through the canvas and linen at the same time, then cut away the canvas around the edges and pull out the threads beneath the stitches. It is easiest to draw them out with a steel crochet-hook caught in the meshes.

If, instead of the linen, huckaback or some square-meshed material is taken, the design can be worked directly upon the material. Then silk may be used if the needlewoman likes, and for some materials cross-stitch done with wool is very pretty.

Tea-Cloth Border

The border worked on the tea-cloth is done in red and green, and for that, too, the detailed pattern with the color key may be followed. In this border, as it will be seen on the complete picture, two motifs, a large and a small, are repeated alternately along the sides. In this border all the single lines are done in green, while the solid figures have an outlining of green, with the center filled in with red.

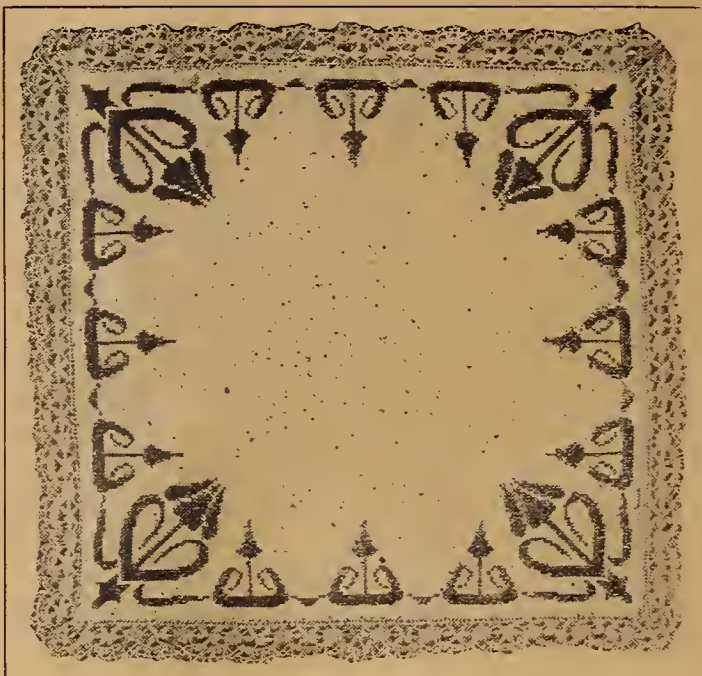
These two designs are not limited to the uses suggested on this page. In fact, the tea-cloth and scarf merely suggest two ways in which the cross-stitch designs may be used. These patterns are suitable for many purposes—towels, pillow-cases, sheets, table-cloths, bureau-scarfs, pin-cushions, sofa-pillows and pillows for chair-backs. The needlewoman will find many uses for them, and in working them will learn anew how beautiful this work is, how much more attractive than ordinary embroidery, and at the same time how much easier to make. It suggests a splendid way to use up odds and ends of material and beautify the home at the same time.

Cross-Stitch Patterns for Filet Crochet

Nor can these designs be employed only for cross-stitch. The needlewoman fond of filet crochet will find that the squirrel-



Quaint squirrel-and-tree design for a scarf



A tea-cloth border which may be used for many other pieces

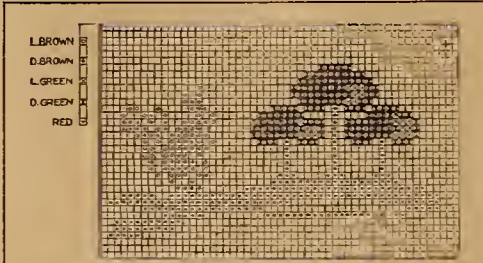


Diagram pattern of the stitches in the squirrel-and-tree design, and a key to the colors used in both patterns

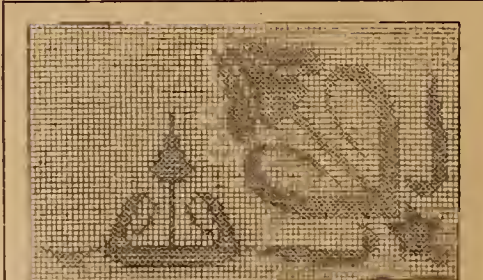


Diagram showing the placing of the stitches in the tea-cloth border design. The key to the colors is given above

and-tree design will work up most delightfully in fine cotton. In starting the filet crochet allow three chain stitches for each square of the

width. Make a hole (two chains and one double crochet) for each square of the background, and for each square of the design make three double crochet stitches.

Squirrel-and-Tree Bedroom-Set

Say that one has decided to use the squirrel-and-tree design for an entire bedroom-set, and indeed nothing would be more lovely. The scarf for the dresser should be in cross-stitch and a long pin-cushion of linen to match the scarf also might have the cross-stitch design upon it. The towels for the room, particularly those of guest-towel size, might have the group of trees embroidered in color above the hem.

For the bed-linen crochet the design. Insert it as an oblong medallion just above the hem of the pillow-cases and the upper sheet, and do the work with No. 50 crochet-cotton.

How to do Cross-Stitch

Many beginners are puzzled when they attempt cross-stitch, simple as the work is. It should be done as follows: Begin by

passing the thread up through the material at the lower right-hand corner of the square to be worked, cross to the upper left-hand corner, and there pass needle and thread down through the material. If a number of stitches are to be made in a horizontal row, bring the needle up again in the lower left-hand corner, cross to the upper right-hand corner of the next square, and so make stitch after stitch, until the extreme left of the row is reached. Then return along the row, crossing each thread with a thread from the lower left-hand corner to the upper right-hand corner.

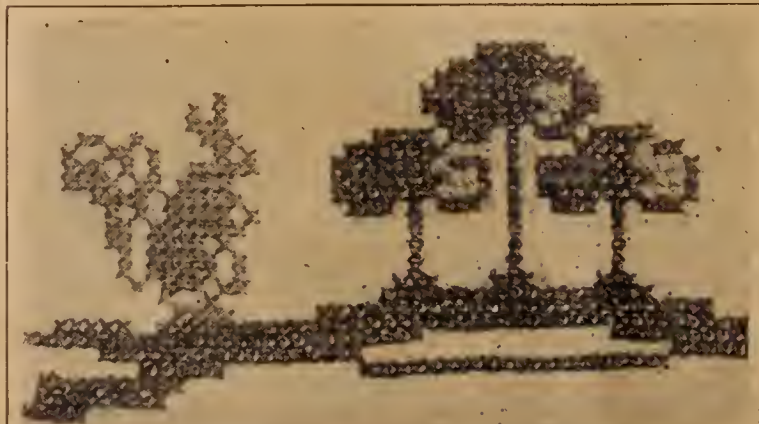
Old-Fashioned Samplers

Those who are fortunate enough to possess old-fashioned samplers will find them a never-failing source of new patterns, for it is these samplers which inspire the designer of to-day. The quaint birds and trees which appear on them, the little houses and queer figures, all make lovely motifs, particularly for towels. If you have an old sampler, get

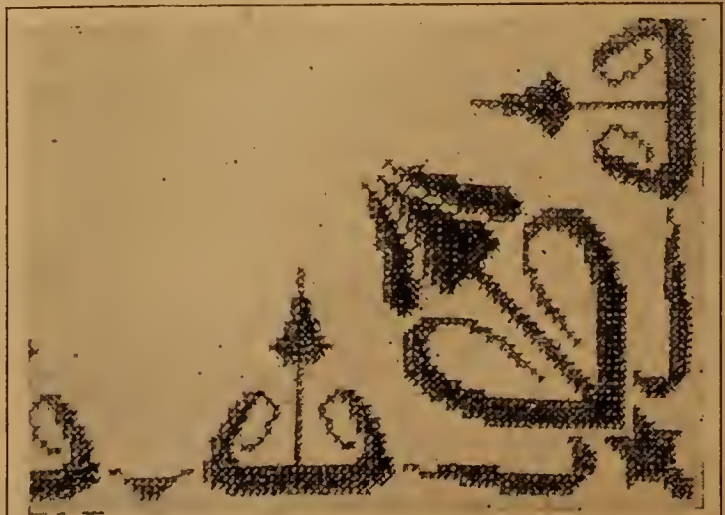
it out and copy the designs, and use the sampler itself, framed, as a wall decoration or for a tray. In either case a broad, old-fashioned walnut frame is the prettiest thing to use, and if the framed sampler is intended to be used as a tray fasten a brass tray-handle at either side. These handles may be bought in large hardware or picture stores, and usually sell for about fifty cents apiece.

How to Make a Sampler

The woman who has no old samplers frequently wishes to get patterns for one. She may do what our grandmothers did, and make for herself an original sampler, a thing of beauty to hand down to generations to come. Their method of making a sampler was to take a large piece of some canvas or square-meshed material, copying on it such simple patterns as they could obtain from their friends, a little house from one, a tree from another, and so on till the material was covered. Of course the needlewoman takes care to arrange her patterns in some pretty way, and to choose colors that look well together, and in this work there is opportunity for the exercise of genuine artistic taste. If the designs have been gathered in this way, one has not only a beautiful sampler from which patterns may be taken for household linens, aprons and the children's clothes, but a friendship chart as well, a reminder of those who have contributed the bits from which the sampler has been made.



Detail of squirrel-and-tree design



Corner of the border used on the tea-cloth

Maternity Clothes And Attractive Children's Dresses

Designs by Grace Margaret Gould



No. 2253
No. 2254

No. 2253—Misses' Waist: Sleeves in Two Styles
12 to 18 years. This pattern, ten cents

No. 2254—Misses' Four-Gored Panel Skirt
12 to 18 years. This pattern, ten cents



No. 2185—Long-Waisted Panel Dress

6 months, 1, 2 and 4 years. Material required for 2 years, three and three-fourths yards of twenty-two-inch material, one-half yard of embroidery for panel. Pattern, ten cents



No. 2184—Yoke Dress with Short Sleeves

6 months, 1, 2 and 4 years. Material required for 2 years, one and three-fourths yards of thirty-six-inch material, with one eighth of a yard of embroidery for yoke. Pattern, ten cents

No. 2255—Girl's Dress Buttoned in Front

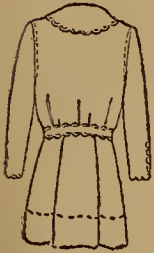
6 to 12 years. Material for 8 years, four and one-eighth yards of twenty-two-inch material, or two and one-eighth yards of thirty-six-inch material, three fourths of a yard of contrasting material thirty-six inches wide. This pattern, ten cents



No. 2255



No. 2253
No. 2254



No. 2216



No. 2185



No. 2216—Buttoned-in-Front Dress: Large Armholes

6 to 12 years. Material for 8 years, three and three-fourths yards of twenty-seven-inch material, or two and seven-eighths yards of thirty-six-inch. Price of pattern, ten cents

Prize-Winners

The first prize of Five Dollars is awarded to Pearl Weaver, Fultonham, Ohio, for an original design for a practical afternoon dress.

The second prize of Three Dollars goes to Mrs. Hugh G. Graham, Bowling Green, Kentucky, for a bath-apron to be used when giving baby a bath.

The prize-winning designs will be illustrated in the May 10th issue.

This contest appeared in the February 1st issue of Farm and Fireside and was for the best and second best suggestions for the fashion page.

No. 2264—Vest Waist with Broad Collar 32 to 42 bust. Material for 36-inch bust, one and seven-eighths yards of thirty-six-inch, five-eighths yard of contrasting material for vest, three-fourths yard for collar, one-fourth for girdle. Pattern, ten cents

No. 2265—Four-Gored Skirt 22 to 32 waist. Material for 26-inch waist, four and one-fourth yards of thirty-six-inch material. The price of this skirt pattern is ten cents

No. 2159—Empire Maternity Gown 34 to 44 bust. Material for 36-inch bust, six and one-fourth yards of thirty-six-inch material, one yard of lace, and one-fourth yard contrasting material. One and three-fourths yards of net for gumpie. The price of pattern for this gown is ten cents

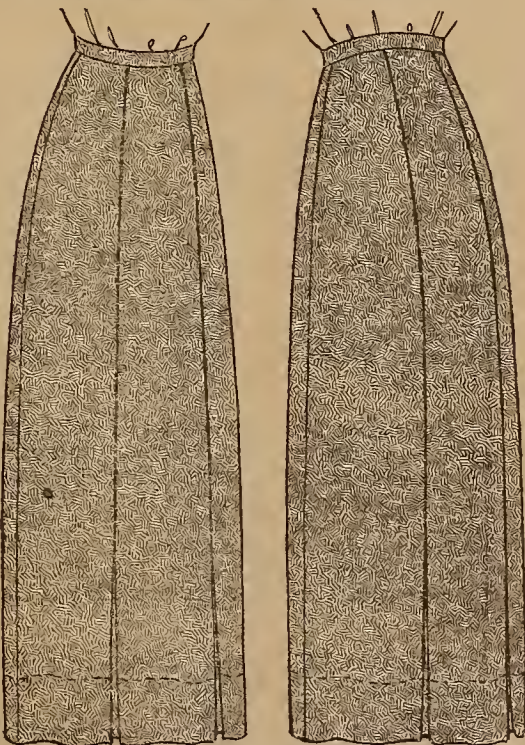
Order patterns from: Pattern Department, Farm and Fireside, 381 Fourth Avenue, New York City; Pattern Department, Farm and Fireside, Springfield, Ohio; Pattern Department, Farm and Fireside, 1554 California Street, Denver, Colorado



No. 2264
No. 2265



An attractive afternoon dress



No. 2157—Six-Gored Maternity Skirt 24 to 34 waist. Price of this pattern is ten cents



No. 2212—Plaited Dress: Tucked Collar and Cuffs

6 to 12 years. Material for 8 years, four yards of thirty-six-inch material, with one-half yard of contrasting material. This little dress is suitable for gingham, chambray, linen and serge. This pattern, ten cents



No. 2255



No. 2212



No. 2184



No. 2159

Maternity dress in graceful lines



No. 2159

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By special arrangement with the leading home and family papers in America, you can get any one of these great papers for a year with Farm and Fireside as explained below.

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Farm and Fireside
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Poultry Husbandry gives every month pointers and ideas for producing eggs and raising fowl that mean success. It is edited by the best authorities on poultry in America. It is filled with secrets of feed mixtures, quick-growing chicks, ideas that men hesitate to part with. Poultry Husbandry has one motto—Make the hen attend strictly to business. It is invaluable to the poultry-raiser.

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Spring and Summer Dishes

By Those Who Have Tried Them

Egg-and-Cheese Salad—Arrange crisp lettuce-leaves on a flat plate. Form cottage cheese into small balls. Arrange these balls, with alternate slices of hard-boiled eggs, on the lettuce-leaves. Pour over all a French dressing made of three teaspoonfuls of olive-oil, one scant teaspoonful of salt, a little paprika and two scant tablespoonfuls of vinegar. Serve with salted crackers.

Spring Salad—Cook young beets until tender. Cut in thin slices. Cut young onions in inch lengths. Arrange in salad-bowl in alternate layers. Heat together a cupful of vinegar, a tablespoonful of butter, salt and a teaspoonful of sugar. Bring to the boiling-point, and pour over the salad. If procurable water-cress is an addition to this salad.

Grapefruit Fritters—Pare the fruit with a sharp knife, removing every bit of the white skin. Remove the pulp from each section, picking out the seeds. Sift into a mixing-bowl one cupful of flour, one salt-spoonful of salt, one heaping tablespoonful of sugar, and rub to a smooth, stiff batter with the yolks of two eggs and a little milk. Add the prepared grapefruit and more milk if necessary to make it drop smoothly from the spoon. Fold in lightly the stiffly beaten whites of four eggs, and drop by teaspoonfuls into hot oil. When done, drain, and dust with powdered sugar.

Cabbage Omelet—To the well-beaten yolks of four eggs add one small cupful of sweet milk, pepper and salt to season, one cupful of cold boiled cabbage chopped fine and the well-beaten whites of the eggs. Pour into a buttered pan, and cook as usual.

Rhubarb-and-Raisin Pie—One and one-half cupfuls of rhubarb cut small, one-half cupful of chopped raisins, one cupful of sugar, mix; fill a paste-lined plate, sift over a teaspoonful of flour, and add the top crust.

Green-Bean Salad—Cut the beans in inch lengths, boil in salted water until tender. Drain and cool. Line the salad dish with lettuce-leaves. Slice green onions thin; arrange beans and onions in the dish, and serve with mayonnaise or boiled dressing.

Chiffonade Salad—Any and all green vegetables in season may be used for this salad. Care should be taken in the arrangement. Cut red and green peppers in thin rings (cutting around the pepper) after removing the seeds and white fiber. Beets may be cut in balls or dice, cucumbers in long strips and tomatoes in slices. Arrange in a dish lined with lettuce-leaves; over all sprinkle celery cut in fine dice, and marinate with a French dressing. Garnish with sprigs of water-cress or feathery parsley.

Bread Omelet—Soak one cupful of bread-crumbs in one cupful of cream, add salt, pepper and nutmeg to taste and three well-beaten eggs. Beat lightly, and fry like plain omelet.

Cream Omelet—Three eggs slightly beaten, three tablespoonfuls of cream, salt and pepper to season. Heat and butter a pan, and when almost brown put in the eggs. Lift from the center occasionally until the whole is soft and creamy. Brown slightly, and serve hot.

Celery Omelet—Beat the yolks of two eggs, add two tablespoonfuls of milk or cream, two of chopped celery, salt and pepper to taste and the stiffly beaten whites of the eggs. Cook in a buttered pan until slightly brown underneath, then place in the oven until dry on top, fold over, and turn out.

Egg-and-Asparagus Salad—Cut hard-boiled eggs in halves lengthwise. Remove the yolks, and mash to a pulp. Season with salt, pepper, a little onion juice and a sprinkling of chopped sweet green pepper. Form in balls, and fill the cavities in the hard-boiled whites of the eggs.

Cook asparagus-tips in salted water until tender; drain, and cool. Arrange the eggs in a flat salad-dish, alternating with a little mound of the asparagus-tips. Serve with a French dressing.

Tomato Salad—Select medium-sized tomatoes, one for each person to be served. Wash, and dry carefully. Cut off a slice from the stem end of each and remove the pulp carefully. Cut the pulp and one whole tomato in small pieces (do not chop). Cut one onion in dice, and a small stalk of celery in small pieces. Mix the tomato pulp, the onion and the celery lightly but thoroughly. Stuff the tomatoes with the mixture, and serve on lettuce-leaves, with a generous spoonful of mayonnaise dressing heaped on each tomato. A delicious salad and very appetizing in appearance.

Nut Salad—Blanch peanuts; put in the oven, and brown with a bit of butter and a sprinkle of salt. When cold chop coarsely. To each cupful of nuts add two cupfuls of finely cut celery and an equal amount of apples. Mix thoroughly. Serve on lettuce-leaves, with mayonnaise dressing.

Rhubarb Tart—One pint of stewed rhubarb, four ounces of sugar, one cupful of cream, two ounces of pounded crackers, three eggs; beat all together well, and bake with one crust.

Rhubarb Sherbet—Wash a bunch of rhubarb, cut in small pieces, and cook slowly in a quart of water until tender, adding the grated rind of a lemon and a cupful or more of sugar. Strain, and stand on ice two hours; serve with crushed ice in glasses.

Olive Omelet—Chop one-half can of mushrooms and one-fourth cupful of stoned olives, and beat in enough cream to make a paste, seasoning to taste. Make a plain omelet, and just before serving fold in the mushroom and olive paste. Garnish with parsley and stoned olives.

Orange Omelet—Beat the yolks of three eggs and three tablespoonfuls of sugar to a cream, add the grated rind of an orange and three tablespoonfuls of the juice. Fold in the beaten whites, and cook as usual.

Tomato Omelet—Beat four eggs very light, add one-fourth cupful of flour mixed smooth with a little milk, pepper and salt to season and one cupful of finely chopped tomatoes, either fresh or canned. Pour into a hot buttered pan, and fry slowly. When done, serve at once on a hot dish.

Cucumber Salad—Pare large crisp cucumbers, and cut in fourths crosswise. Remove the seeds, thus making little cups. Set each cucumber cup in a curled lettuce-leaf. Chop cold boiled beets finely, add a minced onion, mix thoroughly, then fill the cucumber cups with the mixture. Serve with French or mayonnaise dressing.

Potato-and-Cucumber Salad—Boil potatoes in the skins, and let cool. Then remove the skins, and cut the potatoes into small dice. Chop a medium-sized onion fine. Pare two fresh, crisp cucumbers, cut in four lengths, and remove the largest seeds. Cut into dice. Mix the potatoes and cucumbers together lightly

with a silver fork. Pile in salad-bowl, and sprinkle with the chopped onion. Pour mayonnaise dressing over all, and sprinkle with finely minced parsley.

Rhubarb-and-Tapioca Pudding—Soak a cupful of tapioca overnight, and cook in water until perfectly smooth and of the consistency of warm blanc-mange. Partly fill a baking-dish with fresh rhubarb, add sugar plentifully, pour the tapioca over it, cover, and bake for thirty-five or forty minutes.

Sardine Salad—Six cold boiled potatoes cut into small cubes, two onions, one tablespoonful of minced parsley, two hard-boiled eggs cut fine and twelve sardines flaked. Moisten with boiled dressing, and garnish with cubes of boiled beets and parsley.

Cabbage - and - Green - Pepper Salad—Chop a firm head of cabbage. Wash the peppers, remove white fiber and seeds, cut into thin shreds, and mix with the cabbage. Make a hot dressing of one-half cupful of vinegar (dilute if too strong), two tablespoonfuls of sugar and a small spoonful of salt. Pour over the mixture, then sprinkle with dried hard-boiled eggs.

Cup Puddings—Butter as many cups as there are persons to be served, and into each put a large spoonful of stewed and sweetened rhubarb. Pour boiling water on a pint of bread-crumbs, let them soak until soft, then drain. Add to the crumbs one well-beaten egg, a large spoonful of sugar, a little nutmeg, and mix well together. Turn this upon the rhubarb in the cups, and bake. Serve with cream and sugar.

Sour-Cream Biscuits—One teaspoonful of sour cream, add to it one pint of sweet milk, one tablespoonful of salt, one tablespoonful of soda and two tablespoonfuls of cream of tartar. Stir in sufficient flour to make a soft dough. Roll, cut into biscuits, and brush over with melted butter. Bake fifteen minutes in a hot oven.

Poverty Cake—Mix well one cupful, each, of sugar, sour milk, flour and raisins, a half cupful of butter, two eggs and two teaspoonfuls of mixed ground spices. Add one level teaspoonful of soda to the sour milk, and dissolve well before stirring into the batter. Bake thirty minutes in a shallow pan.

Filling for Cakes—One cupful, each, of light-brown sugar, sour cream and finely chopped English walnuts. Boil together until the mixture threads, cool, spread between layers. It should be creamy when right. A few drops of orange-extract improves its flavor.

Potatoes and Cheese—This is a very nourishing dish. Pare and slice three medium-sized potatoes. Butter a baking-dish, and sprinkle the bottom with bread-crumbs. Over this place a few slices of onion, a layer of the sliced potato, season lightly with salt and pepper, and dot with butter. Sprinkle with grated cheese and then with bread-crumbs. Repeat until the dish is as full as desired. Beat an egg, add to it a cupful of rich milk, and pour into the dish. If the milk does not cover the contents, add more. Bake covered for half an hour. Remove the cover, and bake another half-hour. A cupful of cheese is about right for six medium potatoes.

Glaze for Pastry

WHEN a brown shiny glaze is desired on pastry, the article to be baked should be brushed over with an egg mixture before being placed in the oven. Beat together one egg and a tablespoonful of water until they are well mixed, without having the egg frothy, then brush over every part of the surface of the pastry, using a coarse feather for the purpose.

Should an uncolored glaze be preferred, use only the white of the egg with a half tablespoonful of water.

For bread and rolls another kind of glaze can be used. Mix four level teaspoonfuls of corn-starch smoothly with four tablespoonfuls of cold water, then add one cupful of boiling water, and stir over a slow fire for eight minutes.

Just before the bread and rolls are done brush the top with the glaze, and return to the oven to dry. When the first coat is dry, repeat the process, and a beautiful, soft, rich crust will be the result.

If sweetened crust is desired, sprinkle over with granulated sugar after the first glaze is put on, and when dry put on the second coat.

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A Page for Sunday Reading

Joseph Sold Into Egypt

By Rev. Chas. O. Bemies

Sunday-school lesson for April 27th: Gen. 37, 23-36. Read Chapter 37.
Golden Text: Charity envieth not.—I. Cor. 13, 4.

The Bible, especially in the Old Testament and the four Gospels, is a country-life book. Let us interpret it accordingly. We believe that the Bible is a true record of facts.

LIKE the old frontier settler who, when another family located within five miles of him, remarked that the country was getting too thickly settled and moved on farther west, so Esau had the free, wild, wandering instinct and found the land of Canaan too crowded for both himself and his brother Jacob, and generously and peacefully took his immense belongings and followers down into the southeast country region of Mt. Seir, leaving Jacob to graze his herds in the land where their father had been a stranger.

Esau would have moved down into the less inhabited region just the same, even if he had not sold the birthright, or Jacob had not meanly tricked his father and stolen the blessing. It was according to his wild nature. Jacob located permanent headquarters at Hebron, twenty miles south of Jerusalem, and sent out his herds in all directions for pasture. His father Isaac was now about one hundred and seventy and living with him, a blind, helpless old man. Jacob was about one hundred and ten, with twelve sons and some daughters, while Joseph was only seventeen, the pride of Jacob's heart.

Jacob's foolish partiality for Joseph made the boy feel his own importance over his older brothers. Besides, he was the first son of Jacob's favorite and most beloved wife, and why would he not expect to be the heir of his father's title and estate? His father's favoritism led him to believe it, for Jacob ordered a distinctive coat made for him out of many colored pieces. By this sign Jacob evidently meant to declare to his other sons that Joseph was to be the chief heir. But Joseph wasn't a bundle of conceit only; he had good hard sense as a boy and was thoroughly reliable. Jacob put him in charge of one of his herds, with four of his older brothers under his direction. It galled them. They acted in a surly, evil manner and would not attend to their duties. Joseph felt obliged to report them. All these and other things embittered all the brothers against Joseph. Thus favored by his father, the boy began to dream about the time when he would be chief over his brothers and even over his own father. It angered them and surprised the father.

Joseph was not a weakling however, and when his father sent him on a seventy-mile northerly trip alone, through a dangerous country, where lions, panthers, wolves and bears roamed, to seek out and bring back tidings of the other brothers and the herds, Joseph obeyed with fearless confidence. His brothers, seeing him coming, plotted to kill him, agreeing to report that a wild beast had slain him. But Reuben, the oldest, feeling his responsibility, counter-plotting on the others, proposed not to have his blood on their hands, but to cast him into one of the numerous jug-shaped cisterns, then dry, which were dug out of the solid rock, and let him starve to death, intending later to go alone and take him out and send him home. They agreed, but kept his colored coat.

While with fiendish satisfaction they ate their meal afterward, Reuben being absent, they partly repented and sold Joseph as a slave to a passing caravan on its way to Egypt. Reuben was inconsolable when he found it out. But they dipped Joseph's coat in the blood of a kid and later made their father believe that a wild beast had killed Joseph. Jacob was stricken to the core with uncontrollable grief and, wearing sackcloth and ashes, declared he would go down to the grave sorrowing for his son. Most of the misery which people suffer is not brought on them by themselves, but by others. Think it over carefully. Are you suffering because of the sins of others, or have you caused others to suffer?

Joseph Interprets Dreams

By Rev. Chas. O. Bemies

Sunday-school lesson for May 4th: Gen. 40, 9-23. Read Chapter 40.

Golden Text: The inspiration of the Almighty giveth them understanding.—Job 32, 8.

YOU can't keep a good man down, except you kill him, any more than you can make oil settle to the bottom of a pail of water. Place him without a cent

on the poorest farm in your neighborhood, and in ten years he'll build up and own the most productive one around.

Joseph was no slipshod whining around that he had no chance. When he found himself sold as a slave, on the way to Egypt he made himself useful, willing and cheerful to his owners; and when he was brought to the slave-market in Egypt, instead of cringing in fear and hopelessness, he stood straight up to his full height, with physical, manliness, intelligence and personal character written all over him. He was the pick of the bunch, and made himself bring the highest price, thereby getting into the personal service of the chief officer of Pharaoh's guard, Potipher the Egyptian. Joseph took hold of his duties under his new master with cheerful thoroughness in every detail. He rose rapidly in position and confidence with Potipher, until he became the general manager, private secretary and personal counselor over all his property, farming operations and household affairs. And God blessed Potipher's prosperity and household abundantly because of Joseph's faith and integrity. A God-filled, intelligent common sense cannot be beaten. There was one snare laid for him, however. Potipher's wife loved him ardently, but he avoided the temptation and kept true to God and to his master. If every young man were a clean, God-fearing Joseph, there would be few unhappy homes in the land. On account of his fidelity, Potipher's wife conspired against him, and he was sent to prison, after ten years of faithful work. This was enough to break the spirit of your half-hearted fellow, who would lament that it didn't pay to serve God! But not so with Joseph. Nothing could break him. He renewed his faith, buckled up his belt another notch and pitched in with his very best again just where he was. He soon became promoted to be the general manager, under the jailer, of all the prisoners and every detail of the entire prison. He alone was responsible for everything, and God prospered him. Among the prisoners were two former high officials, the chief butler, or cup-bearer, and the baker to Pharaoh. These two were naturally worried for their lives.

They both dreamed, and then couldn't tell what their dreams meant. Joseph told them. The butler was to be restored to his position again on the third day, while the baker was to lose his head. Joseph asked the butler to speak a good word for him to Pharaoh after his restoration. But the butler, overjoyed at his freedom and old position again, ungratefully forgot about Joseph. Someone has said, "Ingratitude is the foulest whelp of hell." But Joseph bided his time, and filled his prison position with steady fidelity.

How We May Profit by Habit

By Rev. John F. Watts

As his custom was.—Luke 4, 16

WHEN you see a pianist playing a selection from memory, do you admire the ease with which she places her fingers upon the right keys at the exact instant? Do you envy the baseball-pitcher who delivers the ball across the plate at terrific speed?

Both have acquired their skill by long practice, and the law of habit has helped them. Why can the experienced man husk twice as much corn as the green man and do it with greater ease? Because the work has become a habit.

Habit is the power by which it is easier to do a thing the second time than it is the first, and still easier each subsequent time until, finally, the thing almost does

itself. Then the habit is fixed. The muscles, nerves, fibers and nerve-cells have a power of adjustment that enables them to act with greater ease each time any task is done. If it were not for habit, any work would be equally hard every time it was undertaken.

When a boy plows for the first time, a half-day's work nearly uses him up. His muscles are sore, his limbs ache with the work. But let him persevere, and before long his body and mind will become accustomed to the work, and it will become so easy that he is surprised to think it ever was so hard.

Modern scientists assure us that habits make paths in the brain, much in the same way that a pouring rain makes paths in the soft ground. The longer the rain falls, the deeper are the paths made by it. The water runs down the deepest paths with great force, so that a man has hard work to force it to go elsewhere. So habit forms paths in the brain.

Habits may be a wonderful help to us, or they may curse us.

Daniel purposed in his heart that he would not defile himself with the wine that was offered him. He maintained the temperate habit of his early boyhood, and therefore became stronger than the princes about him. The Apostle Peter was a profane man before he became a Christian, and on one occasion, at least, afterward that old habit broke out, to his shame. Whether the law of habit helps us or harms us depends upon the kind of habits we form.

Not many years ago a man in an eastern city was given up to die of consumption. Well-directed exercise quickened his circulation, good food and rest gave him vigor, and in three years he astonished his friends by his feats of strength.

M. Blondin practised walking the tight rope until it became a habit. Some are now living who remember seeing him walk, with a man upon his back, on a rope strung across Niagara.

Is your new task difficult? Don't give up! Try it again! It will be easier the second time. Others have done it with ease. You can, if you will persist.

Beware lest any evil habit become established. Habit is at first a silk thread; at last it is a heavy chain. You cannot afford to have that chain pulling you down when you might have used it in such a way that it would be helping you. Rip Van Winkle accepted drinks of liquor, saying "This time won't count," but each time did count, and each time always will count, with everyone. A well-dressed man waited to see the captain of detectives in Philadelphia and asked to be locked up. He had been a pickpocket, and now, though innocent of any crime, felt the old desire coming upon him with overwhelming power. Nothing short of power from above, from the One who said we must be born again, can save such a man.

Cultivate the habits which make a good, strong, pure character. Industry, honesty, truthfulness, skill—in fact, all the virtues which make a person efficient and helpful—are the result of habit.

Somebody's Neighbor

By Rev. William J. Burtcher

THE fact that Peter and Andrew were with Jesus when he called James and John made it easier for James and John to respond, seeing that their neighbors were already going. The reason so many men are wrong-doers to-day is because their neighbors are. When their neighbors do better, they will. We are somebody's neighbor.

A Prayer—By the Rev. William J. Burtcher

WE COME, O God, with praises and petitions.

We thank thee for Truth. There is no truth as true and eternal as thy Truth. We are searching for it to-day, and pray that thou wilt help us to find it, and take hold of it, and live it. May all we think and say and do harmonize with Truth.

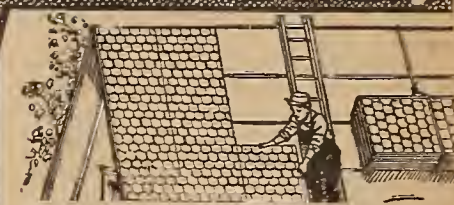
We thank thee for Law. There is no law as perfect and unchangeable as thy Law. We pray that thou wilt teach us how to love and keep thy Law to-day, and every day; and how to promote it and enforce it in the land in which we live.

We thank thee for the Word. There is no word as precious and effective as thy Word. There is all of philosophy, and all of poetry, and all of music, and all of beauty in it. We pray that thou wilt teach us to study it, and understand it, and hide it in our minds and hearts, so that the fruit of it may show in our daily conduct.

We thank thee for thy People. There are no people like thy People in greatness and goodness and power. We pray that thou wilt teach us to be and do all thou art expecting of thy People.

We thank thee for thy Creation. We cannot imagine better things than thou has put in this earth for us. We pray that thou wilt teach us how to get the good there is here for us. Fill our minds with the knowledge of it. Fill our eyes with the beauty of it. Fill our ears with the harmony of it. Fill our hands with the worth of it. And fill our souls with the ecstasy of it.

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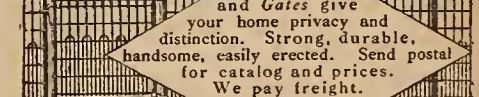
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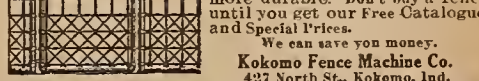
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A Jolly May Day for Our Boys and Girls

Planned by Cousin Sally



A comical jack-in-the-green

DEAR Cousins,—As May Day draws near, I am sure you are wondering how you can celebrate it with the most fun. Here are some plans for having a real, old-fashioned jolly May Day at school, and I know your teachers will be glad to help you.

In the first place, of course you must have a Maypole, with

boys and girls to wind it, and you must have a May Queen who is crowned, and besides these, if there are enough boys, you can have Robin Hood and a troop of his merry men and a funny jack-in-the-green.

If I were you, I would plan to have a procession made up of all the children dressed in their various costumes, and let the procession march from the schoolhouse through the town, and back to school again, where the Maypole is already set up on the green. Then you can have your May Day program, beginning with the crowning of the May Queen, having dances around the Maypole, the winding of the Maypole and finally shooting and running contests by Robin Hood's men.

First of all, choose your May Queen. You may do this in any way that seems best, but I should advise voting for her by ballot. Your teacher will show you how. Each one will write the name of the girl whom she wishes elected on a little slip of paper, and after the votes are collected and counted the girl who has two thirds is chosen. The voting ought to be repeated till somebody has two thirds, or it is not quite fair. In voting for a queen, try to think of the girl who will look pretty and rather dignified at the head of the procession.

The May Queen should have a costume of green with a long train, and there really should be two very little boys dressed as pages to help carry it. Any kind of green cloth will do for it. Cambric is as good as any other. Her hair should hang loosely in curls or in two braids, one over each shoulder.

The pages may wear white suits something like Russian blouses and walk side by side behind the queen, each lifting one corner of her train.

Perhaps twenty little girls may be selected to wind the Maypole. Each one should wear a short full skirt of pink, yellow, blue or green cheese-cloth, a black velvet or cambric girdle and a white waist or guimpe, in imitation of the gay little English farmer girls who used to wind the Maypole. They wear their hair in two braids tied with ribbons to match their petticoats.

The Maypole ought to be gotten at once so that there will be time to practise with it. Some of the biggest boys can probably find a tall, straight, slim, little tree in the woods which will make a fine Maypole by chopping off the branches. A tree about ten feet tall is a good height.

While the boys are getting the tree for



Robin Hood and a troop of his merry men

the pole, the girls can be getting the streamers ready for it. These are simply long, narrow strips of colored cambric. The strips should be about fifteen feet long and two inches wide, and if there are to be twenty to wind the Maypole there must be twenty streamers; five pink, five blue, five yellow and five green. The colors of the streamers match the colors of the little girls' skirts; that is, a little girl in a pink petticoat holds the end of a pink streamer when she winds, a blue petticoat has a blue streamer, and so on.

All of these streamers are tied firmly at the top of the pole and hang straight down when the pole is set up.

Of course, to set it up firmly, a hole must be dug in the school yard and the pole planted in it, with earth and stones heaped around the foot to keep it steady.

Twenty boys, or as many as you have in your school, should be dressed as Robin Hood's merry men, in doublet and hose and jerkins. The easiest way to get somewhat the proper effect will be to have tight-fitting green cambric trousers which come down closely to the shoetops, and instead of shoes have rubber "sneakers" covered with green cambric coming up in a kind of flaring top about the ankles. Little trunks of cambric gathered in short bloomer style can be worn above the green "hose," and tight-fitting little green jackets buttoned up the front. Green or

brown sweaters or jerseys or bathing-suit blazers would answer all right. The hats should be little paper affairs cocked on the sides and a long feather in the front of each. A raid on the chicken-yard will supply cock-tail feathers for these caps. Robin Hood, the chief, may be most bravely decked out of all. He should be one of the taller boys and can be chosen by voting. Each "merry man" carries bow and arrows.

Last of all comes a comical jack-in-the-green. This is simply a boy walking in a framework of leaves. A square frame of sticks or laths is put together and covered with green waving branches nailed to the foundation. A boy puts this framework over his shoulders or, better still, down as far as his waist and walks within it. As nothing is seen but a bunch of green branches with a pair of boy's legs, the effect is very funny. Not too large a boy is best

for "jack-in-the-green." Now for the procession. A page dressed in white comes first carrying on a green cushion the wreath of pink and white flowers to be used for crowning the queen. Apple-blossoms are pretty for this.

Next comes the queen herself walking alone with the two pages carrying her train.

Following, two by two, come the Maypole-winders in their gay costumes, and in single ranks on each side the merry men, who act as a guard. Robin Hood himself may escort the queen.

Last of all comes jack-in-the-green, who may bob about as comically as he likes.

Upon arriving at the schoolhouse, Robin Hood escorts the queen to her throne, which can be built up with a chair or bench on boxes covered with green cambric and then strewn with ferns and leaves. After she mounts to her seat, Robin Hood takes the wreath from the cushion and places it on the queen's head. He then steps down and stands at the head of his troop. From this seat the queen watches the revels which follow, the pages seated in a row at the foot of the throne.

For the winding of the Maypole the little girls (who, of course, must practise beforehand) take each others' hands and join in a ring around the pole. They hippity-hop

five times around one way and then five times the other. Next the winding begins; each one takes her particular streamer, and again they circle around the pole, winding the strands as they do so. After it is wound this way, they unwind the pole and wind it the other. There is a pretty way of weaving the streamers, too, by having the winders go in and out around each other, first behind one girl, then in front of the next.

After the winding of the Maypole, if you like and if your teacher has the time to train you, you can have some pretty and simple little folk-dances on the green, with hoops of flowers or garlands of leaves.

Last of all there may be some Robin Hood contests. A target decked with green should be set up opposite the throne of the May Queen and marked off in circles, and Robin Hood should conduct a bow-and-arrow test for the bullseye. Some practising for this may of course be done beforehand. If you like, you can have a race run on the green by relays of "merry men" with a prize for the winner presented by the Queen of the May.

There can be other athletic feats of all sorts also; trials of high jump and broad jump and wrestling and somersaults and cartwheels.

I hope you will like these ideas, little cousins, for celebrating May Day, and if you do I am sure you will have as much fun carrying them out as the boys and girls did long ago in old England.

Your loving COUSIN SALLY.



The May Queen and her pages



Winding the Maypole

Letty Meets the Art of Life

[CONTINUED FROM PAGE 19]

"Mercy, child," said Mrs. Van Eeden, "ain't boughten things good enough for anyone? Not that I wonder, for it does seem to me that old-fashioned cross-stitch is sightlier than outlinin' a silly Gibson girl on a pillow that looks like the stuff I used to make overalls from. Just wait till I show you some of my folks' old samplers."

Letty handled the little squares with a reverence that surely would not have been given to "old truck" a few weeks ago. Mrs. Van Eeden began to point out the method of working and the soft pastel colors of the thread. "That's white-oak bark, that yellow, you know, and the blue is indigo—none of those new-fangled coal-tar colors. You've got to know something about dyes to git 'em looking like that."

Just why Letty began to experiment with various dyes no one knew exactly, but there were several of the older women in the neighborhood who could offer wisdom on the subject. Her aim was the dyeing of embroidery-threads to a similitude of the old-fashioned colors, and they were fast colors too, as some disasters out in the old summer kitchen proved. The vegetable dyes she tried were mostly heartbreaking in their uncertainty, and were set aside for carefully devised mixtures of commercial dyes, worked over until she got exactly the soft tones of the old-fashioned work. Letty worked with the single-hearted passion of one to whom has been vouchsafed the Perfect Vision. Mrs. Van Eeden had presented her with one of those old hand-woven sheets,

and she had formed the daring design of showing it at the county fair; home-grown and home-woven flax, worked in home-dyed thread, with a border of the old cross-stitch. Few people would know what it meant to her,—a girl's offering upon the shrine of domestic art,—but she felt all the ardor of one newly converted to a great cause.

"Queer how good looking that old-fashioned stuff is, but I don't know what the judges at the county fair will think of it," remarked Doris Hawkins.

"I'm going to give people something to look at," remarked Letty quite loftily. "We're going to have an exhibit of rural handicrafts. Haven't you seen the baskets old Anne Baptiste has been working, and the rush-seated chairs Grandfather Matthews used to make? He's the only man in the county that knows how to make those rush seats, and the summer visitors are coming from way over at the Falls to see him do it."

Just what came under the head of rural handicrafts seemed an uncertain matter to the neighborhood generally. After the idea once got started, Letty was rather embarrassed by the suggestions offered as to exhibits, from Mrs. Tilton's "novelty jar," that displayed scraps of every known variety of hardware securely imbedded in putty, to stuffed birds and pine-cone whatnots. In the end she had to be guided by Doctor Axtun, who had a knack of sifting wheat from chaff without hurting the feelings of those who offered the chaff. And thus was inaugurated the "Display of Lincoln County Handicrafts," which drew crowds of both city and country visitors at the fair that fall. There were some of Grandfather Matthews' rush-seated chairs, which in his own home

had been supplanted by velour and glued wood, and some of the Windsor type in ivory-tinted hickory, that the Dayton boys had been busy with in the farm shop. Old Mrs. Baptiste had always been famous for her baskets, but she had added wonders in stained and natural grasses to her usual splint and osier. Then the blacksmith, encouraged by a talk on metal work with Doctor Axtun, had some hand-wrought latches and hinges, and quaint candlesticks that copied colonial models, though the few surviving iron candlesticks in the neighborhood that dated back to the Revolutionary period were chiefly valued as hog-scrappers. Mrs. Van Eeden's display of patchwork quilts included some wonderfully elaborate designs, in which "hemmed-down" posies glowed from their white background, as well as notable patterns in pieced quilts. It was a little hard on those who had tried eyesight and patience on drawn-work and Irish crochet to see the visitors at the fair surge past their masterpieces to gaze on those bedquilts. But it was Letty, after all, who was, as Eddy said, as proud as the Grand Panjandrum with the button on top. For her patient copy of the old cross-stitch, with its pattern of baskets and garlands, possessed an appeal beyond anything else shown. It was not only its beauty which caused Letty, rather shy and flushed in her white linen frock, to find herself talking quite freely to some very important people who were rated among "distinguished visitors," it was also the sense of local pride which made people talk about the Lincoln County girl who had taken local flax woven by a farm artisan and transformed it into something which a high-browed visitor in

spectacles announced was "an exquisite replica of colonial domestic art."

"Well, do you think you can go back to frying scrapple and chasing turkeys out of the wet grass after talking to the governor and the other big guns?" inquired Lora Matthews, as she and Letty parted that evening.

"Why, don't you know that everything around home is more interesting now than it ever was?" asked Letty. "It's just when you think the farm is only a place to grub along on that you feel you ought to get out and hunt for something better. Why, that lady from the art school said that Joe Labree's hand-made hinges were like those on a Flemish dower chest, and she's going to write about the renaissance of rural art." Letty drew a deep sigh of contented fatigue. "Lora, doesn't it make just living a heap more worth while? I can think about beautiful things even when I'm frying scrapple or rounding up turkeys. And if old-time people who worked just as hard as we do could make beautiful things, just because it all grew out of themselves, why shouldn't we? The country's the place for it anyway."

Lora shook her head rather doubtfully; her father's farming was still in the stage of dubious prosperity, where the chinch-bug means tragedy, and art is not so vital as the fertilizer-bill. Letty's enthusiasm was still a little beyond her, and yet the little grain of mustard-seed might in time spread into a goodly tree. Whether the future keeps Letty on the farm, or whether her present ideas of rural handicrafts finally develop into country workshops where trained workers develop use into beauty, is as yet unknown, but at least she has learned that rural life is the cradle of enduring beauty.

Valuable Things on Your Farm

By Ida Carothers Merriam

WHAT is the most valuable thing on your farm? The horses? The cows and pigs? The rich soil or new silo? The splendid big barns? Think again, and see if, in truth, it is not the well-being of the people who live and work there. True enough, in many cases, if we are to judge from the relative amounts of time and care and money spent upon them, the live stock is far more valuable than the human beings.



This is only too true in reference to many farm women. Almost without fail, as the farm becomes more prosperous, the farmer has more help, both men and machinery, while the work of his wife is simply increased—more people to cook and wash dishes for, more fruit, more chickens, more milk to tend. And in the majority of cases she does not have help as her work becomes heavier. I grant that it is sometimes impossible to secure household helpers in the country. But even where help can be secured, and, above all, where it cannot, a great deal can be done to lighten the tasks of the housekeeper by the use of labor-saving devices and methods. Money so spent brings wonderful returns in strength and rest.

Let the man of the house appreciate the fact that the work of the women is quite as important as his own, and that there is quite as much need for labor-saving inventions in the house as in the field. It is true that many men, because they do not realize how wearing housework is, are reluctant to put money into work-saving improvements. The farm home exists, just as do other homes, for the benefit of the people within it. And yet, on many farms, far more money and thought are expended on the care and well-being of the cows and the horses and the pigs than on the care and well-being of those same people. It is a statistical fact that farm women die earlier than do farm men, and that those who survive the years of drudgery break in health sooner than do the men. The opposite is true in town. There is no doubt in my mind that the biggest factor in the development of this state of affairs is the woeful lack of labor-saving contrivances in the farm woman's home. Many houses in the country are still without that greatest of labor-savers—a kitchen sink, a sink with a pump or faucet and with a drain leading out from it. The carrying in and out of water is the most laborious and back-breaking task of all the hard tasks belonging to the housekeeper. There is no substitute for a kitchen sink. If you can add but one thing to your home this year, and if you have no kitchen sink, let that be the addition. A whole system of plumbing, including kitchen sink, fittings for a bathroom, hot-water tank and piping for all, can now be secured so reasonably that a great effort to secure its placement in the home should be made. The amount of drudgery eliminated from the housekeeper's duties by such a system is surprising.

Aside from getting the co-operation of the men in having such things as kitchen sinks and water-heaters installed, and in making various labor-saving contrivances, the housekeeper herself can do much to make her work easier. I wonder if you have ever thought how much unnecessary drudgery many farm women go through in regard to cooking? Farm women sin far more grievously than do town women in this respect. I have sat down to country meals at which there were two kinds of meat, gravy, five different vegetables, three varieties of pickles, eggs, bread and butter, hot biscuit, three or more varieties of jelly or preserves, two kinds of cake, besides cookies, and tea and coffee. Such a great variety at one meal is worse than unnecessary. The important things to see to are that the meal presents a balanced ration, that the amount of food is sufficient and that it is well cooked and served. The farmer has long been accustomed to giving his stock a balanced ration, but probably has never thought of the desirability of the same sort of thing for himself. It means that in a meal there should be some lean, some fat, some sweet and some starch, or, as the domestic-science people say, some proteid, some hydrocarbon and some carbohydrate.

Quite as satisfying as the meal described above, both for appetite and for bodily needs, is a meal consisting of one kind of meat, potatoes and gravy, one green vegetable served, possibly, as a

salad, bread and butter, one kind of jelly or preserve, cheese and coffee. One does not need a vivid imagination to see the difference in the amount of work required to prepare and serve these two meals. The desire for variety is just as well satisfied by variety at different meals as by a great variety at one meal—and by how much less work!

Be on the lookout for labor-saving ideas of all sorts. One thing that will be more helpful than you think is a system for your housework. Try to eliminate superfluous motions. Do it by having your tools as conveniently placed as possible and by performing your daily tasks in the most convenient order possible.

First, the placing of the tools. In the kitchen keep all lids for cooking-vessels in a rack by the stove, not put away in the pantry or cupboard across the room. Have two sets of salt and pepper shakers instead of one. Keep one set on the shelf by the stove, the other on the table where you do your mixing. Instead of going into another room for a needed pin, or of using an easily soiled cloth cushion, nail up a large clean cork in a convenient place and see what a splendid pincushion it makes. On a row of nails or hooks over the sink or work-table keep the tools you use often—egg-beater, can-opener, mixing-spoon, dish-mop, kitchen shears, strainer, etc. And see to it that the nails are so plentiful that only one article need hang on each nail. How often have you wasted time and energy trying to get one tool when two or three others were hanging on top of it? That same time would have sufficed for putting up three or four nails. Keep the cook-book on a convenient shelf instead of in a drawer under the dish-towels—you'll use it oftener.

In the other rooms arrange things with equal convenience. Keep a dust-cloth in a pocket on your closet-door as well as in the linen-closet, and a can of scouring-powder in the bath-room (if you have one) as well as in the kitchen. If you have a bath-room that lacks a towel-drawer, get a box large enough for a seat, hinge the cover, line it inside and out—oilcloth is good for that—and see how much time and energy it saves to have the supply of fresh towels where needed.

Then the order of daily tasks. Choose the order in which you have found by experience you can perform them most easily. Then stick to that program for two reasons: you will suffer less fatigue, and you will be able to work with greater speed than by doing the same tasks in haphazard fashion.

An appreciation of the health and happiness of the people on the farm as the most valuable things there, and treatment of them in accordance with their worth, will do much to better the condition of the farm woman. In many cases it will undoubtedly preserve her health and lengthen her life.

A bad way that, when children and young people are allowed to be careless with each other, badgering with epithets and nicknames and unkind hits. Later it is not so easy to be ladies and gentlemen as associates in business and society, sometimes under provocation; because in mental habit they lack sense of the sacredness of personality, a very valuable asset.

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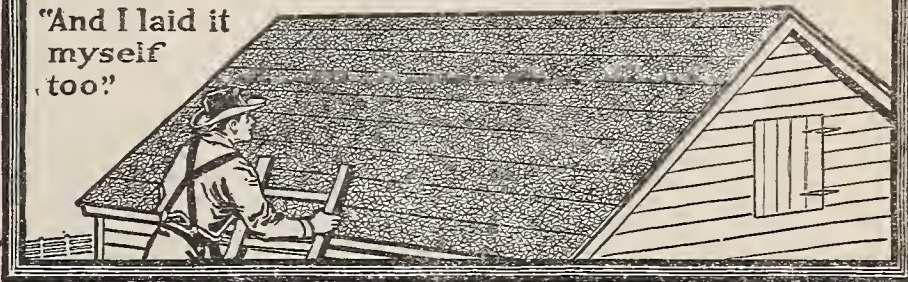
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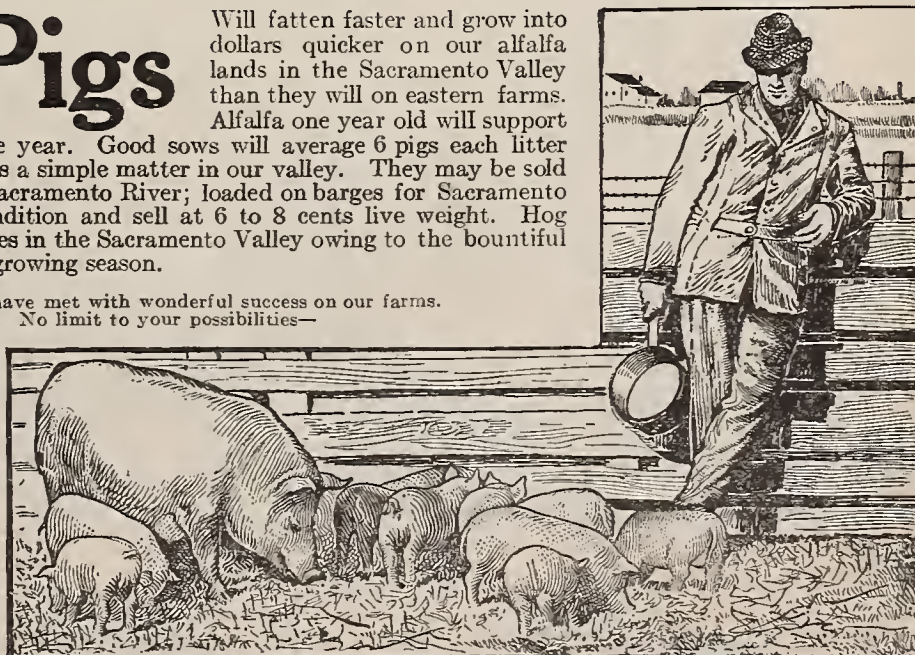
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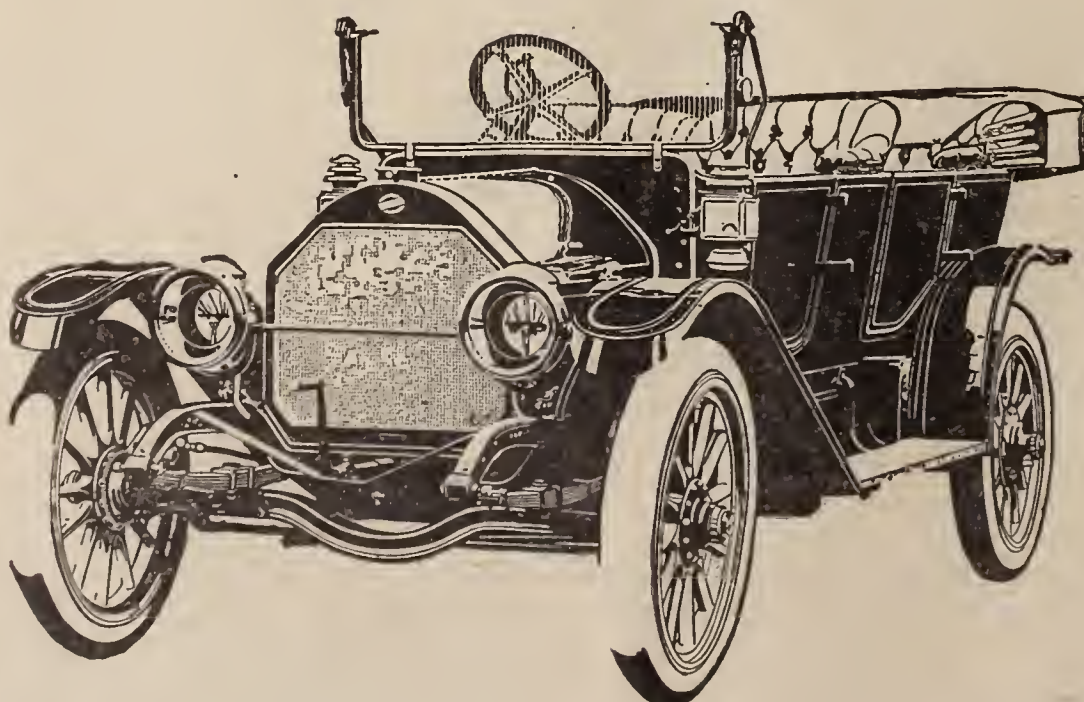
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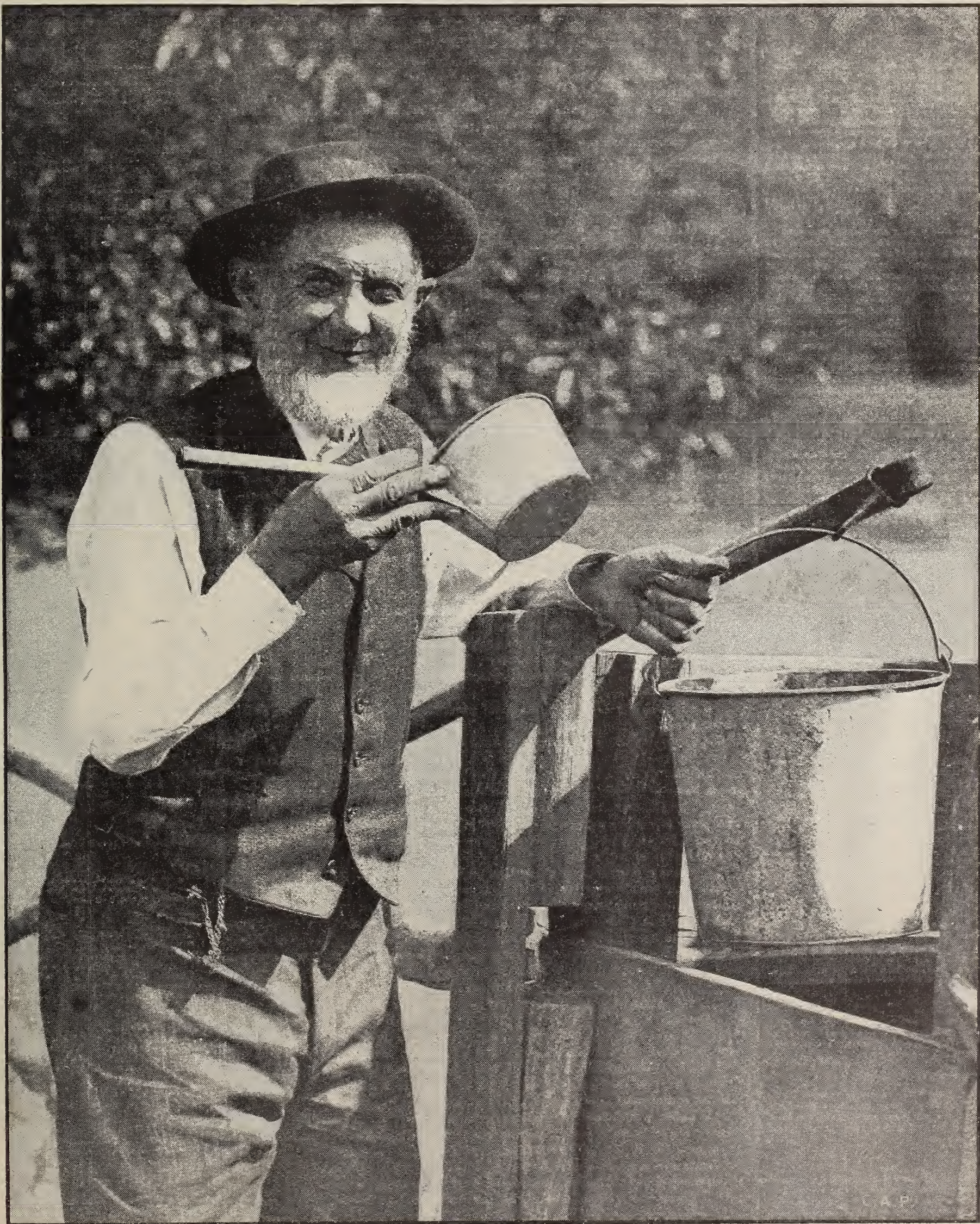
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FARM AND FIRESIDE

EVERY OTHER WEEK THE NATIONAL FARM PAPER

ESTABLISHED 1877

SATURDAY, MAY 10, 1913



Prohibition

THE EDITOR'S BULLETIN OF BETTER THINGS COMING

Special Articles

"Milking-Machines in Arizona." an article which shows primarily the business side of machine milking with a small bird, incidentally illuminates you concerning Arizona as a State of dairy possibilities.

A full page next issue will deal with the subject of cutting timothy-bay, bow and when. While other kinds of grass, and hay may have their periods of popularity, the usefulness and the sterling qualities of timothy make it a crop which should not be passed over unnoticed at this time of year.

Among the many interesting devices to appear will be an excellent type of fly-trap with full description for making it and protecting your house and stables against the annual fly invasion that will soon arrive.

Farm Notes

"Repairing Chimneys with Stucco" tells of a method for making an old brick chimney which is about to fall to pieces artistic and permanent by means of stucco. The total cost of repairing a chimney by the method described does not exceed seventy-five cents. Practical short articles, poems and farm fables will also appear under Farm Notes, and if you are interested in national affairs you will enjoy "Moving Pictures of Mexico."

Crops and Soils

Do you know why the hemp business is declining? Various writers have attempted to urge farmers to go into the hemp business, but those who have followed their advice have in many cases not profited by the venture. An article to appear shortly tells why the hemp business is unprofitable under present conditions, notwithstanding high prices. Oftentimes when the head of the family believes in some new project, but doesn't care to try it, he gives the boys a chance. An article by F. R. Miller, of Tennessee, on "Boys and Bushels" tells of one of these instances and what the boys accomplished.

Garden and Orchard

Here are a few of the curious farm creatures to be found on almost every farm: the tree-toad, the ladybird, the doodle-bug and the humpback worm. If you are not already familiar with all of these creatures, you will be interested in Mr. Nowlan's illustrated discussion of them. "How I Planted Fifteen Thousand Apple-Trees" will appeal to the man with the large farm and who is interested in big business agriculturally.

Poultry

In an article "The Value of a Strain," an authority on heredity gives us some facts about inbreeding with special comment on how it can be used in a commercial way. Do you know beans as a poultry feed? Mr. Vandervort discusses the use of beans in the poultry ration in a sensible, practical way.

Live Stock and Dairy

FARM AND FIRESIDE is constantly on the lookout for agricultural novelties. An article in this category is "Homespun Houses for Hogs."

"The English farmer has for centuries known the value of roots as a stock-feed. John P. Ross, a regular contributor and an Englishman, tells some interesting points about roots in an article entitled "Roots—The Confection for Live Stock." Analyses of different root crops prove his statements.

Fiction

"The Pride of the Armstrongs" is the title of our Memorial Day story. It tells of a battle of self-sacrifice fought and won by a boy, and how the winning made it possible for the old hero of many battles to prove that he was still a hero, after more than fifty years.

Children's Page

A charming garden story will be welcomed by the boys and girls just at this time, with a few letters from some of the Club members.

Fashions and Needlework

Some excellent designs for wash dresses and a page of easy-to-make crochet are on their way to the presses and will be ready for your scrutiny in a few weeks.

Cookery

If you are planning a family gathering or a neighborhood party, the menu for a Decoration Day dinner will give you just the ideas you are looking for, and help you to carry them out.

Another article of especial interest to women is a short and true story of one woman's way of finding pleasure as well as profit in keeping summer boarders.

WITH THE EDITOR

A Letter From Minnesota

is what he says by way of beginning:

I have been one of your readers for a number of years, and the number of useful hints I have got from it are worth many times the price of the paper. I have tried to get you some subscribers here, but the people are all very poor, and they say they can't afford to take any more papers than they are taking. I am very poor myself, and have a large family. It is hard to support a large family here, as it is very stony. Dairying is about the only way to make money, but it is hard for a poor man to buy cows, as they are very high.

This man's location is in a part of Minnesota which is admirably situated for dairying, and in which the soil is peculiarly adapted to pasture-grasses and clovers. The stones can be slowly removed. The grass will grow between the stumps and stones. The problem is to get cows. It will take grit and perseverance, but if a rule is adopted under which he will forget all about the possibility of selling a heifer, he will sooner or later get ahead of the game.

It takes years to build up a dairy herd, but in his part of the world the man who owns land on which to pasture it is independent as soon as he has accumulated one. Prices for butter-fat are almost always good in Minnesota. I am inclined to think that what this man needs is a strong injection of the essence of optimism. I am still more inclined to think so by what follows.

A Millionaire's Correspondence

"Now," says he, "I want to ask you to do me a favor. I should like to send my boys to college; and as I have read in the papers that the millionaires give away so much money I thought one or the other of them would give me a thousand dollars to give my boys a start in college. But I don't know their addresses. Will you please write me the addresses of J. P. Morgan, Andrew Carnegie, Mrs. Robert Carson, Captain J. C. Marty, P. A. B. Widener and J. D. Rockefeller?"

Some of these millionaires are dead—one has died since the letter of our correspondent was written. The medical profession is learning new things in the healing art all the time, but it is not yet wise enough to keep the breath in the body of even a Morgan—when his time comes. Our Minnesota friend has probably a better chance for a long life than any of the rich men he envies. But that is a digression.

Of course, none of these men would answer a letter from our friend if he should write asking for the thousand dollars. All such millionaires are in receipt of such letters every day, and all of them have to hire secretaries to sift out the letters which are not to be read by their employers, and those which should. So there would be no chance whatever of our subscriber's letter getting to the eyes of the rich person, if mailed to him. They cannot read such letters, to say nothing of answering them. They cannot answer them, let alone granting the favors asked. They have other things to do.

Confidence Better Than Capital

But would the thousand dollars do our friend any good? I am absolutely satisfied in my own mind that it would not. What his sons need is not money, but confidence in themselves, and determination to win a college education. Any boy who is ready for college can get through without a cent of monetary aid—if he has nobody to look after but himself.

I have no personal knowledge of the conditions at the University of Minnesota, but I have no doubt that there are dozens, if not hundreds, of boys working their way through that institution.

If, instead of trying to get the address of millionaires from whom to ask aid, he would take his boys to the University of Minnesota—or send them there—he would accomplish a lot more. Maybe they are not yet ready. Maybe they never will be. There are a great many boys and girls—and some mighty smart in their own ways—who cannot master a college course. Maybe his boys are of the latter sort. They may be and can still be successful in the world.

I know a poet who told me that he had to go into literature because he was too ignorant to become an engineer—which was his ambition. He couldn't master university mathematics. He went into newspaper work, and when I last saw him was getting \$7,500 a year in the way of salary. He is quite a distinct success for all his failure in college. Not every boy can be a success in college, no matter how much money he possesses.

The Hindu and You

But it can almost be laid down as a rule, that any American boy who is ready for college and is able to make good in his college work can work his way through. He can do it in a dozen colleges east and west. His professors will take an interest in him and help him to find work. His classmates will help him. His class adviser will help him. If he is a good student help will flock to him. Not offers of money, but a thing a thousand times better, offers of work.

I know a Hindu boy who came to the Agricultural College of the University of Wisconsin four or five years ago without a cent and is graduating next June. He has worked his way through. The average boy from an American farm is vastly better equipped for such a struggle than was this young man so far from his native land.

I know one school where the fellows who had money were rather ashamed of it—they felt that the real way to go to school was on the work-your-way basis. And think of the difference, all through the young man's life between "J. P. Morgan sent me to college!" and "I sent myself!" I want those boys up in Minnesota to go to college, in the real Minnesota way—independent, by gracious!

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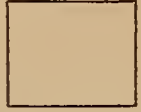
FARM AND FIRESIDE



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Springfield, Ohio, May 10, 1913

PUBLISHED
BI-WEEKLY

You Have Waited Long Enough

VARIOUS systems of organized marketing of farm produce are now being tried out by hundreds of associations of farmers in every section of the country. The results of co-operative marketing have been published in past issues of FARM AND FIRESIDE, but we shall be able to furnish even more valuable light on organized marketing from now on.

The following account of what is being accomplished by the "Milk-Producers' Association" of Chicago is furnished us by Mr. Albert E. Jack, secretary of the association:

Beginning about January 1, 1913, we began a vigorous campaign for high prices for milk. Last summer the Chicago distributors gave us \$1.26 2/3 per hundred pounds for our milk. On February 3d, we declared for \$1.50 and promised to stand together for the price.

We organized at all the important points, and as a result about four fifths of all the milk-supply of this city was sold at approximately our price. This is, as you may know, about fourteen cents per hundred pounds higher than the producers around New York are receiving, and hitherto they have received from four to six cents per hundred pounds more than we did.

This has been a campaign of education largely, as most of our effort has been spent in showing the actual poverty wages our farmers were receiving for their labor.

But why wait till crowded to the wall before you organize? An individual acting independently is becoming comparatively less powerful every time a new organization develops. We must either organize our own community into an association or join one already established. For nowadays an independent individual cannot deal satisfactorily with an organization which is able to dictate terms, and most organizations are able to so dictate.

Why Home-Mixed Fertilizer?

THE discussion of factory-mixed versus home-mixed fertilizer is once more taking a prominent place wherever farmers congregate. Even the bonanza farmers of the once-virgin prairies now begin to share in these discussions. Unquestionably farmers who are organized can profit by purchasing the separate ingredients and mixing them at home. So can they profit by pooling their purchases of mixed goods, if intelligent discrimination is used by the buyer.

The greatest gain coming to farmers by practising home mixing for a season or two, at least, is their becoming familiar with different grades of fertilizer and getting a clear comprehension of the sources of the most important kinds of plant-food. The farmer who has never studied out the matter of home mixing as a rule feels satisfied with brands of ready-mixed fertilizer analyzing too low to give the fullest value from its use. Brands showing 1:8:2 have a very different meaning from a 3:7:10 brand, after a farmer has mixed his own fertilizer a few times. Home mixing is to be recommended as an educational influence, if for no other reason. After a farmer becomes competent to mix his own fertilizer, he is ready to purchase ready-mixed goods discriminatingly, if it seems desirable to do so.

Coming—Federal Market Reports

VARIOUS organizations, when stumped by a big problem, have concluded "to turn it over to the Federal Government" and let it settle the matter. For the most part the Federal Government has taken up these burdens cheerfully and has handled them in a fairly satisfactory manner, though not always in such a way as to escape criticism.

Readers of FARM AND FIRESIDE will be gratified to learn that an Office of Markets has been established in the United States Department of Agriculture under the fifty-thousand-dollar appropriation included in the agricultural bill, and work is now going forward.

One of the men who has been instrumental in the establishment of this market in an executive way, and who was chairman of the committee to organize it, is W. J. Spillman, who is in charge of Farm Management in the Bureau of Plant Industry. Mr. Spillman is not a "desk" agricultural expert, but a practical man who has traveled widely over the country, and who knows agriculture and men too.

Mr. Spillman is in favor of the establishment of daily market reports under the authority of the Federal Government. We presume the quotations will be collected by wire and the reports printed and distributed in much the same manner that the weather reports and forecasts are prepared.

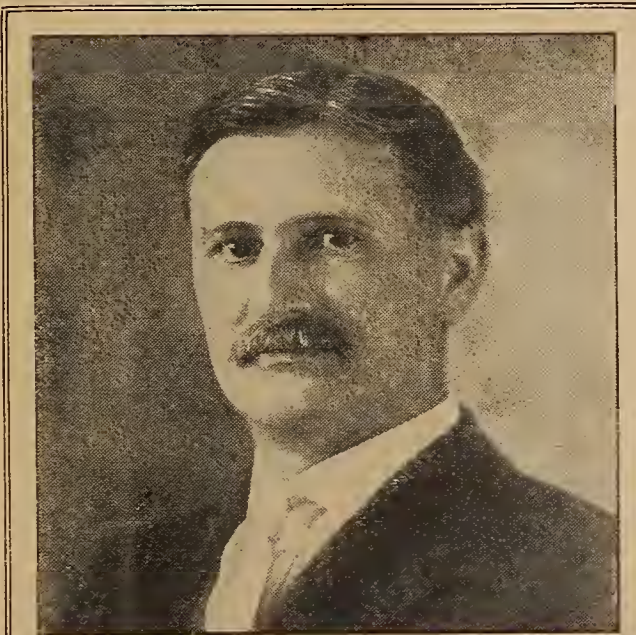
The principal purpose of the daily market reports will be to show the farmers the various smaller channels of trade as well as the great markets where products are indiscriminately dumped into the hands of commission merchants either for local sale or for redistribution.

With quotations for the smaller markets at hand, the products of the farms will, for the most part, go in a direct route instead of going to the large centers and then being shipped to the smaller towns in a process of redistribution. With perishable products especially, the saving of time and expense will be enormous.

The establishment of federal market reports will also tend to the establishment of public markets in all towns of reasonable size.

FARM AND FIRESIDE's ideal of a federal office on marketing is briefly this:

First, the office should recognize the importance and great value of the public knowing the market value of farm products all over the country. To this end it should distribute accurate daily market reports under



W. J. Spillman, of the United States Department of Agriculture, who is in favor of the establishment of daily market reports under the authority and supervision of the Federal Government

the direct supervision of the Federal Government and uninfluenced by commission men and speculators.

Second, a federal announcement or proclamation should be issued in the spring, which will give the farmers of the country some idea at least of the probable demand for various kinds of crops. This would, in some measure, prevent the overplanting of some crops and the underplanting of others. Third, it should work persistently for the improvement of our parcel-post service.

We expect to see results from this federal interest in marketing, even though at times our patience will be sorely tried, for the government wheels go slowly. But with many hands helping to turn them they will eventually turn out good work. At present we look forward confidently to better markets, which we believe are coming, even though they are not yet in sight.

Our Climate in a Nutshell

FROM Weather Bureau data covering a period of fourteen years and based on figures covering the United States, exclusive of Alaska and other possessions, G. A. Lindsay, a practical weather sharp, announces that the average temperature of the United States is 52.9 degrees Fahrenheit, and the annual amount of rainfall is 1,308 cubic miles.

The State of Arizona had the lowest amount of annual precipitation, 5.8 inches, of any state during the fourteen years which extended from 1891 to 1904, inclusive. Alabama had the greatest amount of rainfall, 71.6 inches.

The State having the lowest average temperature was North Dakota, 35.5 degrees. Florida had the highest temperature, 71.8 degrees.

Soils That Give Double Measure

MANY corn-belt farmers take the stories of the bumper yields matured in New England and other eastern States "with a grain of salt." A three-hundred-bushel-per-acre yield of potatoes, sixty to ninety bushels of corn, twenty-five to thirty-five of wheat, thirty or more of barley, grown without unusual cultural effort looks suspicious to farmers growing their crops in plots of forty to fifty acres or over with an average yield one half less.

The secret of the heavier yields is not so much in superior culture as it is well-adapted fertilizing and moisture control. In corn and potato production a higher yield is undoubtedly influenced more by superiority of seed and, with the potato, protection from pests and blights.

The most uniformly successful eastern corn-grower saves and cures his seed-corn with the same care that he gives to the preparation of the seed-bed; he makes sure that abundance of plant-food is available when the seed germinates. He knows that a quarter or a third of a full stand means a corresponding reduction in his dairy herd the following winter, or else the same reduction in his profits from the necessity of buying the grain not produced.

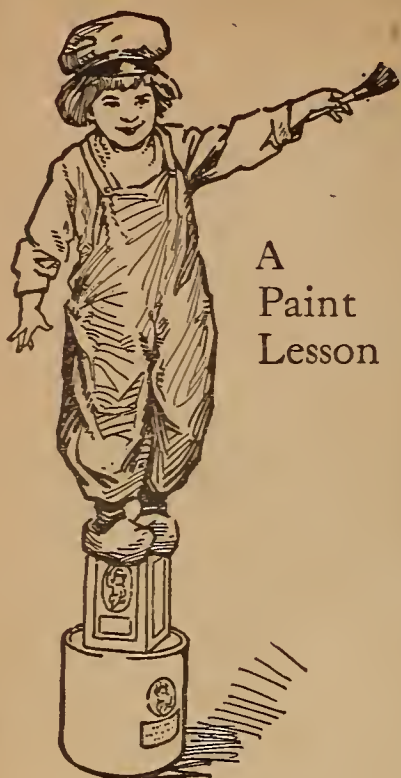
On account of his season being shorter, he realizes the importance of rapid development of his crops. The western farmer of large areas still sits at the feet of the man who is making a thin, inferior soil fill the measure twice while the rich, deep soil of the level prairies fills it once.

Bad Citizens

FRESH evidence steadily accumulates showing how rats and insect vermin generally contribute to man's afflictions. The rat has already been convicted of complicity in spreading the Asiatic plague and other diseases. Now some German medical savants are credited with having completed investigations which show that rats and cockroaches are responsible for the spread of cancerous diseases among rodents and perhaps other animals as well.

A species of "intestinal parasite" has been found to cause cancerous growths in rats quite generally. The parasitic worm deposits eggs in the rats, and the eggs, after being discharged, are eaten by cockroaches, in which the parasite passes a period of its life cycle. In turn the cockroaches are devoured by rats, which thus become continuously a medium for distribution of cancer.

Nowadays rodents, flies and other insects frequenting our homes and farms are being black-listed for many of humanity's most infectious ills. The rat, too, has been indicted on many counts for destroying property worth scores of millions of dollars yearly. Our duty has become plain: We must systematically co-operate to prevent the breeding of these forms of life that are not only useless, but threaten life by spreading contagion through many channels until but recently unsuspected.



A Paint Lesson

We paint ten times for our eyes' sake to once for the sake of the building. The poorer the paint the oftener we must renew it to maintain the building's good appearance.

The beauty of a painted building lasts two or three times as long if secured by paint made of Dutch Boy White Lead and Dutch Boy Linseed Oil.

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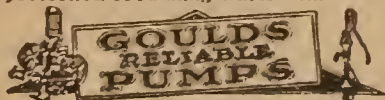
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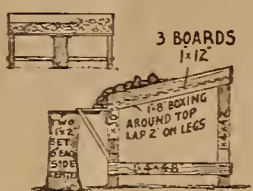
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The Headwork Shop

Made Possible by the Ingenuity of Our Readers

Seed-Potatoes Cut Quickly.



Use one-by-four-inch material for the legs thirty inches high in front, forty-two inches in rear; nail one-by-four braces on three sides, leaving front open; allow the side braces to project one inch at back, and nail "crate fashion."

This table will hold six bushels and is made for two cutters, one on each side of the sack. Use a sharp butcher-knife. Cut the potatoes lengthwise through the seed end into halves or quarters (according to size), and hold these pieces together while making the one or two cross-cuts.

This will give you at least two eyes on every piece, and you have made three motions to cut the potato into eight pieces, whereas the old way would take at least five. You are cutting downward against a board with a large knife, thus doing away with cramped fingers and split thumbs.

You save much time by having the potatoes always under your hand, simply rolling them two or three inches into position.

LOUIS C. HINMAN.

Economy Bean-Harvester

TO MAKE a bean-harvester that will do good work and yet involve scarcely any expense, take a common hoe to the blacksmith. Have the shank cut in two, and take a piece of steel of the same diameter and have a piece about ten inches long welded in. This is to keep the handle from striking the beans and shelling them. Have the hoe sharp, and cut just at top of ground, putting two rows into one when chopped off.

You can chop them nearly as fast as you can walk, and when the beans are dry take a common pitchfork and load onto a wagon. In this way much hard labor is saved with but little expense.

B. J. HEWITT.

Step for Ladder

ANYONE who has ever done any painting from a ladder will appreciate the value of this device. Bend two irons V shaped as shown, each end having a half-circle to fit over the rounds of the ladder. Drill two holes in the top angle in which to put bolts for fastening the flat step. The step can be quickly changed from one position to another.

HERBERT S. DANA.

Durable Tomato-Trellis

FOR this tomato-trellis use strips two and one-half by seven-eighths inches for the short pieces and one by three-eighths inches for the long. The short legs are put on with one-fourth-inch bolts two inches long.

Place a length of the trellis on each side of the row so that the long legs will cross. Barrel-staves can be placed crosswise at any desired height to support the plants. In the fall the short legs can be closed down beside the long ones and the racks packed away.

I have trellises that have been in use four years and are good for four years more. The lengths can, of course, be longer or shorter as desired.

CHAS. F. BROWNE.

Repairing a Broken Tug



WHAT a disappointment a broken harness tug is when all is in a hurry and you are obliged to stop work and lose a half-day or more at the distant harness shop. Here is a quick, cheap and durable method of repairing any harness tug from materials commonly found on the farm.

Procure a flat iron hoop such as is found on a pail, keg or tub. Take one that is not rusted badly, and cut a piece about eight inches long. Straighten it, and with a punch or spike make four holes, two at each end of the piece as illustrated. These should be about two inches apart.

Open each end of the tug where broken, being careful not to break any stitches, and after measuring the tug parts so that holes may correspond with those already made in the piece of hoop iron, insert it, bringing the ends of the tug together as originally broken. Now insert the rivets, hammer down, and your tug is stout and new.

In the sketch AA show the broken tug parts: B, the hoop-iron section cut and punched ready to use; C, the hoop iron in place, and DDDD, the rivets.

G. A. RANDALL.

Making Over an Old Brush



WHEN paint is allowed to dry on a brush, it produces a hard crust on the outside. Instead of throwing such a brush away, one can make it do further service by cutting around the top part of the hairs with a sharp knife and removing the outside part with the dry paint.

As the illustrations show, the brush is made smaller, but is practically as good as new.

HERBERT S. DANA.

Fastening Woodwork to Concrete

IN PLACING a wooden covering on a well-curb that has been finished in concrete, or in attaching woodwork to any flat cement surface, it is necessary to use bolts or rods. To put a wooden platform over the opening in the well, imbed four or more bolts, four to six inches long, in the green concrete with the beads in and the threaded ends up and protruding far enough to extend through a hole bored in the cover with room for the taps to be screwed on. Wood may be attached to other flat concrete in a similar manner.

H. F. GRINSTEAD.

A Safety-Pin File



WITH a stout piece of string attached as shown in the illustration, I have found a large safety-pin quite valuable to file and hang up canning factory weigh-bills, cream stubs and other papers. One pin has filed the entire season's bills. It can also be easily carried in pocket or wallet.

E. P. GOFFE.

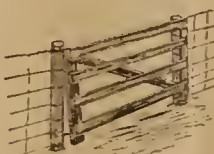
A Neat and Firm Splice



ANY kind of timber may be spliced neatly and firmly by cutting each piece as shown in the illustration. The timbers must be cut in such manner that there will be a square hole in the center. To join them bring the timbers up sideways, then into the square hole drive a square wedge to fit, and the timbers will be drawn up in a tight joint, and will be held in place without nails or spikes. The wedge may be sawed off on each side and a small nail driven in to hold it in place. The notch for the splice should be cut as deep as the width of the timber will allow without weakening it.

H. F. GRINSTEAD.

Gate That Stays Shut



TO HAVE a gate that shuts itself, stays shut and gives no further trouble, hang it on a slant. Put the gate on the stock side of the enclosure, and as soon as it is free it will swing shut, and the more you push it, the more secure it is.

Hang it so that the free side will lap over on the next post. A latch should be provided as a precaution against strong winds, outside stock or other causes which might push the gate from the other direction.

E. TICKNOR.

Headwork Winner—April Twenty-Sixth

The first-prize contribution in the Headwork Shop, in the April 26th issue, was "To Make a Scaffold Bracket," by Roy Coleman

When You Write Us

IN WRITING to the editors of FARM AND FIRESIDE for information please sign your full name and post-office address. We ask this for two reasons: first, in order that we may know you are a subscriber and, second, because further information is sometimes necessary before the question can be answered in the columns of FARM AND FIRESIDE. Your name will not be published without permission.

CLEARED AWAY

Proper Food Put the Troubles Away.

Our own troubles always seem more severe than any others. But when a man is unable to eat even a light breakfast, for years, without severe distress, he has trouble enough.

It is small wonder he likes to tell of food which cleared away the troubles. "I am glad of the opportunity to tell of the good Grape-Nuts has done for me," writes a N. H. man. "For many years I was unable to eat even a light breakfast without great suffering."

"After eating I would suddenly be seized with an attack of colic and vomiting. This would be followed by headache and misery that would sometimes last a week or more, leaving me so weak I could hardly sit up or walk."

"Since I began to eat Grape-Nuts I have been free from the old troubles. I usually eat Grape-Nuts one or more times a day, taking it at the beginning of the meal. Now I can eat almost anything I want without trouble."

"When I began to use Grape-Nuts I was way under my usual weight, now I weigh 30 pounds more than I ever weighed in my life, and I am glad to speak of the food that has worked the change." Name given by Postum Co., Battle Creek, Mich. Read the little booklet, "The Road to Wellville," in pkgs. "There's a Reason."

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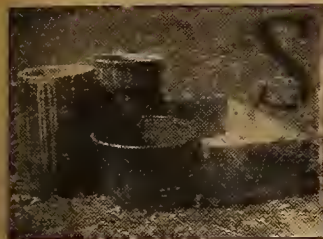
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Safeguarding the Potato Crop

The Best Potato Insurance is Thorough Spraying with Mixtures Which This Article Tells How to Make and Apply

By W. H. Jenkins



Receptacles for making stock solutions of Bordeaux mixture

PRAYING potatoes with Bordeaux mixture should be regarded as an insurance against the fungus which causes the blighting of the foliage and rotting of the tubers. In a dry season potato-blight may do but little damage, but sufficient fungus survives until the next year, and if the season is wet it increases so rapidly as often to destroy the foliage of the potato early in the season and ruin the crop.

The early blighting of the foliage cuts off the food-supply. It should be understood that about ninety per cent. of plant-foods are the gases in the atmosphere, which are absorbed by plants through the pores of the leaves, and that it is just as important to preserve the leaves of the plant healthy and intact as to apply plant-food to the soil to be taken up by the roots. When the blight destroys the leaves of the potato early in the summer its main supply of food is cut off, and the tubers stop growing before they attain their full size, and ripen, and therefore there is a small yield of soggy potatoes. Records have shown that there is a wet season at least four years out of every ten, and that the potato crop will be much injured by the blight unless thorough and timely spraying is practised.

Spraying is the Only Practical Known Means of Preventing Potato Blight

We should practise both early and late spraying with Bordeaux mixture, because the soft rot of the tubers is a different manifestation of the same disease which destroys the leaves of the plant. If the potatoes blight this year the bacteria which destroy the foliage will be carried over in the seed-potatoes and cause rotting of the tubers that are produced from them next year. The extent of the rot will depend on weather conditions. If we plant seed containing the blight fungus, and a wet summer follows, it will develop, and the result will be the rotting of the tubers.

There is but one way to prevent the blighting of the foliage and the rotting of the tubers, which, as has been said, are the same disease, and that is timely spraying with Bordeaux mixture.

The early spraying of the potatoes with Bordeaux makes it possible to destroy beetles with small additional

The above directions look like a formidable task to the average farmer who has many things to attend to during the busy season, but his problem has been solved by modern invention. If he has sufficient acreage of potatoes to warrant the purchase of the new riding automatic horse-power sprayer, or can combine with neighbors in buying one, he can ride on a comfortable seat and let the machine do the work better than he could do it in the old way with a hand pump. When it is not possible to obtain an automatic horse-power sprayer good work can be done with a hand barrel-outfit mounted on a wagon, or even with a knapsack sprayer or compressed-air sprayer. The usual prices of different kinds of sprayers are \$60 to \$100 for a four-row horse-power sprayer, \$20 to \$30 for a barrel sprayer and outfit, \$10 to \$15 for a knapsack sprayer, and \$5 to \$8 for the compressed-air sprayers. These two latter sprayers are not advised if more than an acre of potatoes is grown.

Take Good Care of the Sprayers and Nozzles to Get Best Results

When using the ordinary barrel sprayer on a wagon there should be three men to operate it, one to drive and pump, and two men to handle the two pieces of hose. When sprayed with the horse-power sprayer the potatoes should be planted so the wheels run between the rows, and three feet apart is just about right. With the horse sprayer use one nozzle per row in the early sprayings, which applies thirty to fifty gallons per acre. For the later sprayings, use two nozzles per row, which will apply about twice as much. There are both one-horsepower and two-horsepower sprayers to suit the need of the purchaser.

Most of the sprayers will do good work and not become clogged and hinder, if they are rightly cared for, and the solutions well made and strained. The solutions should not be allowed to dry in the nozzle or pumps, but the machines should be thoroughly washed after each day's work.

Spraying is a Business Proposition Which Brings Good Returns

Agricultural scientists who have examined the leaves of the potato with the microscope say that ninety per cent. of the germs of the blight are on the under side of the leaf, so we may see the necessity of spraying both the under side and upper side of the leaves, hence a sprayer is desirable that has nozzles that can be set to this work. For satisfactory results in some way the work must be thoroughly done and all parts of the



The result of a spraying experiment at Geneva, New York. The rows on the sides were sprayed six times and yielded 304 bushels per acre. The unsprayed rows in the center yielded 148 bushels per acre

foliage entirely covered, and this cannot be so well done except by a high-pressure sprayer throwing a mist. Ten acres per day is a fair day's work with a two-horsepower sprayer, or one acre per hour, and perhaps about half as much with the one-horse sprayer. Some records at hand show the average cost of spraying potatoes to be \$1 per acre for each application and about \$6 for the season, and that eight years of spraying on one farm shows an increase of forty-four bushels per acre above the average yield of unsprayed potatoes, and a net profit of \$24. To re-state the reasons for spraying briefly, spraying potatoes for blight and rot should be regarded as an insurance against these diseases that may almost totally destroy the crop in a warm, wet summer that is favorable to the development of the fungi. We do not entirely safeguard the crop unless we spray every year whether wet or dry, because some of the fungi will develop in a dry season, and these will vastly multiply when weather conditions are favorable, as in a wet season, and no one knows when a wet season will come and we will lose our crops. Some have figured quite accurately, basing their calculations on past records, that the potato-grower who does not provide this insurance will be sure to lose heavily four or five years out of ten, and scientists, basing their calculation on past records, are expecting 1913 to be a wet year.



Two-horse sprayers in use in a thrifty potato field in New York

cost; in fact, only the cost of adding arsenate of lead to the Bordeaux mixture, for two or three early sprayings, or until the beetles disappear. The writer has found that three or four pounds of arsenate of lead to fifty gallons of Bordeaux mixture is not any too much, and the paste arsenate of lead should be diluted in a small quantity of water. If it is not, it may form a hard lump that will take a long time to dissolve. There are some good reasons for using arsenate of lead instead of paris green. It makes the Bordeaux more valuable as a fungicide, sticks to the leaves better, does not burn them, and being white is a marker. The making of Bordeaux mixture is so well known I will only briefly describe the process.

Formula for Bordeaux Mixture

Copper sulphate (blue vitriol), six pounds; quick-lime (unslaked), four pounds; water, fifty gallons. Dissolve the copper sulphate in one barrel, suspending it in a loose bag, and slake the lime in another by pouring on water slowly. Dilute each to twenty-five gallons, then mix. Before using, strain through fine brass-wire strainer. None of the ready-made Bordeaux mixtures on the market is as good as the home-made Bordeaux. Neither can lime-sulphur solution be profitably substituted for Bordeaux in spraying potatoes.

To destroy bugs or flea-beetles, add poison to the Bordeaux. Usually this is necessary in the first two applications. With each fifty gallons of Bordeaux use one to two pounds of Paris green, or three to five pounds of arsenate of lead.

It is better to make a considerable quantity of the stock solution early in the season, and it will be effectual if the strength varies somewhat from the standard formula. If there is a prospect of a dry season the spraying should be done just as regularly and systematically as in a wet season, as an insurance, for reasons stated. Begin when the tops are six inches high, and spray at intervals of ten days, or two weeks, perhaps six times in all. To be absolutely sure of a good crop spray to the end of the growing season.

What One Experiment Taught Me Nevermore Will I Grow a Crop of Potatoes on the Trust-to-Luck Basis

By George W. Brown

MANY farmers still question the practicability of applying scientific methods in producing crops, and the teachings of farm science are steadily ignored. Men of this class jocosely say that science is a first-rate piece of furniture with which to grace one's upper story, providing he has good common sense upon the ground floor.

Contrary to these opinions so often expressed, my experience and observation have proved to my satisfaction that only by carrying out the teachings of our experiment farms and agricultural colleges can we hope to continue to harvest profitable crops.

An Experiment That Convinced

In potato culture the aids of science are particularly valuable from the operations of the commercial potato-grower down to the town-lot potato-patch. Indeed it is the small grower who can best afford to make sure of the best possible tubers for his own use.

Last season on Lyndale Farm we followed the advice of our experiment station in growing our main crop of tubers, and nevermore will we grow a crop of potatoes otherwise. The top row of potatoes in the illustration shows the result of our work against potato diseases.

The potatoes represented by the lower row were grown from seed from the same measure, but were not treated for scab or sprayed for blight. This row was planted as a check in the middle of our field, and the specimens of these potatoes photographed were the best we could sort out.

Of the potatoes from which those in the upper row were selected, we could measure out bushel after bushel, and even better specimens than those could be shown. It will be noted that even the smallest tubers are without blemish.

The soil was fertilized with a liberal application of animal and poultry manure deeply plowed in, and fine compost harrowed into the surface.

The Seed Was Given the Formalin Treatment for Scab

The tubers used in planting the main plot were immersed for two hours in a formalin solution, using fifteen gallons of water and one-half pint of formalin. The entire plot was cultivated often, the check plot included. Arsenate of lead was used upon the entire plot as a bug-preventive, and Bordeaux mixture was sprayed on three times for blight on the entire plot, save the check row. This row was subjected to the same abuses which most of us practise in growing our crop of tubers for family use. It plainly showed the results and serves to tell the story of small and poor quality in thousands of potato-patches.

Consider the Housewife Too

The question is, will we continue in the same old rut, or will we lift our operations out this season, apply our brains to the task and reap a harvest of tubers next autumn that will be a pleasure to harvest, and at the same time considerably lighten the task of the housewife in peeling and preparing them for the family table?



The top row were average specimens from a field scientifically managed. The potatoes in the bottom row were grown from the same seed but not treated for scab or sprayed

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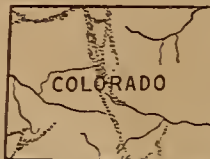
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Crops and Soils

Reviving an Old Combination

By Florence L. Clark



Probably not. A few pumpkins in the corn
just for pies. "the kind mother makes," is
the extent of about nine tenths of the pump-
kin-raising in the country. Yet there is one
locality at least where of late years the
farmers have turned to the pumpkin as a
means of livelihood and are growing the big
yellow fruit at a splendid profit.

In fact, so popular has pumpkin-raising
become at Longmont, Colorado, that a
"Pumpkin-Pie Day" has been instituted as
an annual fall festival. At the outset no
Longmont farmer regarded pumpkin culture
any more seriously than he had back on the
old farm in Illinois or New York. The few
that were raised in the corn were found,
however, to be of such exceptional quality
that gradually more and more were grown.
Then a pumpkin factory was brought to
Longmont at the solicitation of the growers,
and because of it pumpkin-farming was
placed on so good a financial basis that
many farmers began to specialize in
pumpkins. So profitable has it proved since
that a larger acreage has been sown each
year. The 1912 crop assumed enormous pro-
portions, and enough pumpkins were placed
in storage to keep the canning factory busy
for many months.

The Yields are Good and the Prices Satisfactory

"There are many advantages in raising
pumpkins," to quote a prominent Longmont
rancher. "They require very little attention,
are not susceptible to disease, grow rapidly
unmolested by insects and thrive in shade as
well as in sun."

Two crops, corn and pumpkins, can be
raised on the same ground without the least
detrimment to either. Most of the pumpkin
farmers in Colorado follow this system. The
two are planted at the same time, and one
cultivation does for both. The corn is al-
ways ready to harvest first. After it has
been removed the pumpkin-field is left for
two or three weeks. We also sometimes
plant them as a "fill-in" crop when we fail
to get a good stand of sugar-beets, potatoes
or grain. They can be planted as late as
June, so serve excellently as a "filler-in."

The canning factory pays \$3.50 a ton for
the pumpkins. Grown in the corn, they
yield as high as fifteen tons to the acre, mak-
ing a return of \$52.50. When it is known
that seventy-five to a hundred bushels of
corn are not infrequently harvested from the
same acre, the Longmont farmer is justified
in reckoning the proceeds from his pumpkins
as every bit clear profit.

The Four Requirements of a Bumper Corn Crop

By Horatio Markley

TO OBTAIN a large crop of corn four
things are of great importance: first,
the seed; second, the soil; third, the season;
fourth, the method of culture.

Good seed is seed that has vitality enough
to germinate and send up a strong, vigorous
plant; not less than ninety-eight per cent.
should do this. Early in the spring three
kernels of each ear of seed-corn should be
put into a testing-box, and all ears whose
kernels show a faulty germination should
be rejected. This seed should be shelled by
hand and carefully graded for the purpose
of getting an even stand. With corn that
will grow and with the high-grade corn-
planters of to-day, that will plant true ninety-
eight times out of one hundred with graded
corn in the boxes, we should have ninety-
five per cent. of a perfect stand.

The Best Yields Take Longest to Mature

Next to seed that will grow, is the va-
riety that is suited to the soil and conditions
given the crop. One mistake sometimes
made is in growing a small, early, low-
yielding corn on land capable of growing a
larger, later and better yielding crop. For
several years here in Ohio we grew acre
plats of corn of varieties requiring different
lengths of growing season, and in every case
the yield was nearly in proportion to the
length of time required to grow the crop.
That is, a corn that ripened in ninety days
was a much lower yielder than one that
required one hundred and twenty days to
mature. So marked was this difference that
we decided against a variety that will ripen
in less than one hundred and ten days.

Corn shows have been great educators.
More farmers know what good corn is to-day
than ever before. It has been a great in-
centive to do better work and has been of
very great advantage in many ways. But in
one way it has possibly done harm. Buying
a prize ten ears of corn grown on very rich

soil under ideal conditions and taking them
to a distant county and on poorer soil and
less favorable conditions has often resulted
disastrously, and maybe for two or three
years we have grown an immature, chaffy
and comparatively worthless product. To
avoid both these extremes select a corn that
will ripen every year under conditions you
can give it, but that will take about all the
growing season.

The second factor, the soil, is very impor-
tant. Because of the amount of work re-
quired to grow a crop of corn, it is unwise
to plant a poor field to this crop. There are
fields where a corn crop never can be grown
at a profit, because with everything else fa-
vorable there is not enough fertility to grow
a paying crop. These fields should be used
for crops that are not so expensive to grow.
Even with fertile soil everything should be
done by use of clover, manure and, if needed,
commercial fertilizer to make the soil very
productive for this crop.

Good Management Makes Up for Bad Seasons

The third factor of the season is not di-
rectly within our control, but the wise farmer
can make himself very largely independent
of the season by doing the things that are
possible to counteract bad seasonal condi-
tions, thorough drainage of the soil to regu-
late the moisture, early plowing and thorough
preparation to conserve moisture in the dry
season and abundant fertility to push the
crop along in an unfavorable season. All
these will help in a bad corn year, especially
one which is very dry. Every neighborhood
has a few men who rarely, if ever, fail to
grow a good crop of corn, showing plainly
that seasonal conditions are not so bad but
what intelligent and skilful farming will
overcome them. The fourth and last factor,
the method of cultivation, must differ some-
what on soils that are radically different.
For most corn-fields where the land is level
or slightly rolling, certain things are best.
First, have a rotation which allows a clover-
sod for corn, because it contains a large
amount of available nitrogen, for which the
corn-plant is especially hungry; also, an ap-
plication of from eight to ten loads of
manure per acre, because corn is a gross
feeder and will make more use of manure
than any other crop. Other points are:
fairly deep plowing, from seven to nine
inches where soil will permit; thorough
working to prepare a good seed-bed, so as
to allow of an even depth of planting; fifty
to seventy-five pounds of commercial fer-
tilizer per acre, used in the hill, to give the
young plants a quick start, so as to get them
out of the way of insects and large enough
to cultivate a day or two sooner; free use
of weeder and harrow between time of plant-
ing and the coming up of the plants, and
afterward if necessary. Begin use of two-
horse cultivator as soon as possible, giving
frequent shallow level cultivation until corn
is free of weeds and soil in good condition.
Now, having done your part well, you will
have an abundant harvest.

Growing Watermelon for Seed

By C. E. Beckwith

WE HAVE a contract from a seedsman
each year to grow watermelons for the
seed. The seedsman furnishes us with what
he calls "stock" seed, for which we pay
when we deliver the crop of seeds in the fall.
The ground is prepared very carefully, as
if for corn. The seed is planted June 10th
to 15th, pains being taken to put enough
seed in each hill to get a good stand.

As soon as the plants have been cultivated
once or twice, the weeds are cut out with a
hoe and the hills thinned to three vigorous
vines. The better the cultivation, the better
is the crop of melons.

The Seeds are Marketed as Soon as Thoroughly Dry

The melons are left on the vines until all
are ripe or until the frost kills them. They
are then forked into a wagon-box. Two
teams do the drawing. We use horse-power
or gas-power to run the grinder. It took
two and a half days to draw and grind the
ten-acre field of Sweetheart watermelons
that this photograph represents. Then the
seeds are put on drying racks, and if the
weather is favorable they are set outdoors
to dry. They should be raked three or four
times during the day with a common garden-
rake, and by night they will be dry or nearly
so. As soon as dry they are sacked and
sent to the seedsman and our work ends.



Ten acres of Sweetheart watermelons

This field averaged about 260 pounds of
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Garden and Orchard

Scale Foes of Our Trees

By C. M. Weed



Oyster-shell scale

THE scale insects are well named. You see a lot of brown scales upon the bark of a twig. You pry one off and find that it is an insect. So of course you call it a scale insect.

As a rule you need not look long to find the scale-infested twig. Most kinds of trees and shrubs are liable to attack by these insects. They are among the most destructive pests of fruit-trees and are very often troublesome on shade and ornamental trees.

The oyster-shell scale is one of the most characteristic and abundant species. It infests apple, pear, plum, quince and other fruit-trees, as well as maple, poplar, birch and several other forest-trees. Its appearance is shown in the above picture. As will be seen, each scale looks like a miniature oyster-shell, hence its name.

Eggs are Laid Beneath the Scale

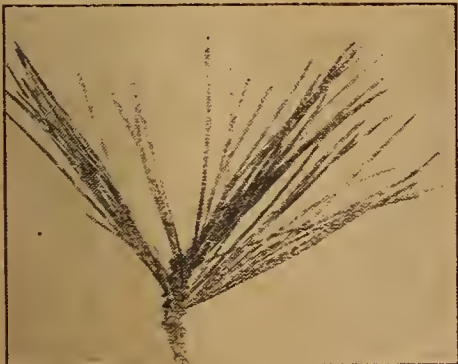
Pry up one of these miniature oyster-shells in winter with a needle-point, and look at it through a lens. You are likely to see a lot of small white eggs in the cavity on the under side. These are the eggs of the scale. They remain in position until late spring or early summer.

Then each hatches into a tiny whitish insect—the scale larva—provided with legs by which it crawls out from its hiding-place and wanders over bark or leaf for two or three days. Then it thrusts its beak into the tissues to suck the sap and settles down to a stationary growth. It increases in size very gradually and slowly secretes the scaly covering. By autumn it looks like a little oyster-shell and the eggs are laid beneath the scale.

The oyster-shell scales are nearly always grayish or brownish in color, resembling in a general way the color of the bark upon which they rest. There is another kind, however, found upon apple and pear trees which is whitish and so is very conspicuous against the darker bark. This is called the scurfy scale. Its life history is similar to that of the oyster-shell scale. The small eggs to be found in winter are reddish purple. The species is often seriously destructive to large and small fruits.

The cottony maple bark-louse is one of the most abundant scale insects and is widely distributed, being on the whole the most serious pest of maples or shade trees. In late spring it occurs upon the branches in the form of round, brown, leathery scales which are raised more or less from the bark by a fluffy mass of cottony down.

Amongst the fibers of this down there are nearly a thousand tiny white eggs which hatch in summer into small active scale-lice. These scatter over the bark and leaves for a short time. Then each fixes itself on the



Scale insects on pine-needles

lower side of a leaf by putting its beak in among the cells. Here they begin to suck the sap and remain in position for several weeks.

Late in summer part of the scales mature into winged scale-lice, which are active and fly about. These are the males. But the rest remain quietly on the leaves until autumn. These are the egg-laying females. Shortly before the time for the leaves to fall off these females crawl onto the twigs and branches, and insert their beaks into the bark. They remain here until spring and gradually develop the cottony mass in which the eggs are laid.

The San Jose Scale

In recent years the most widely destructive insect affecting fruit-trees has been one of these scale insects. It is called the San José scale because it was first noticed in injurious numbers in San José, California. It came originally from China or Japan, but is now

distributed in most fruit-growing regions in the United States and Mexico.

In the case of this insect the individual scales are much smaller than in any of those heretofore mentioned. So they are not likely to be noticed until they become so abundant as to affect the health of the host plant. The tree or shrub begins to wilt or die, and when one looks at the bark it is found to be covered with a scaly crust consisting of millions of the scales of these insects. Each scale forms a tiny circle less than a sixteenth of an inch in diameter, with a dot in the middle.

This insect passes the winter in the form of an immature scale that becomes mature in spring or early summer. Each female scale then gives birth to many young, sometimes three hundred or four hundred. These young are tiny insects that are able to crawl about for a day or so before they settle down on bark, leaf or fruit, inserting their beaks to suck the sap. Each soon begins to secrete its scaly covering, which is formed by the matting together of waxy threads secreted from the skin of the young insect.

The San José scale has been widely distributed on young trees from nurseries, though now there are inspection laws that largely prevent further distribution in this way. It is desirable, however, that all young trees should be examined for the scale before they are set out.

How to Kill Scale Insects

Like the aphides, the scale insects suck the sap from the inside of their food plants. So they must be destroyed by means of contact-killing insecticides. These are generally applied either in early summer soon after the young have hatched or in winter when the trees are dormant. The solutions used can be made much stronger in the latter case.

A combination of lime and sulphur or of lime, salt and sulphur is very generally used for destroying scale insects. It is called the lime-sulphur wash. It is commonly applied while the trees are dormant. Various oily substances are also used against scale insects.

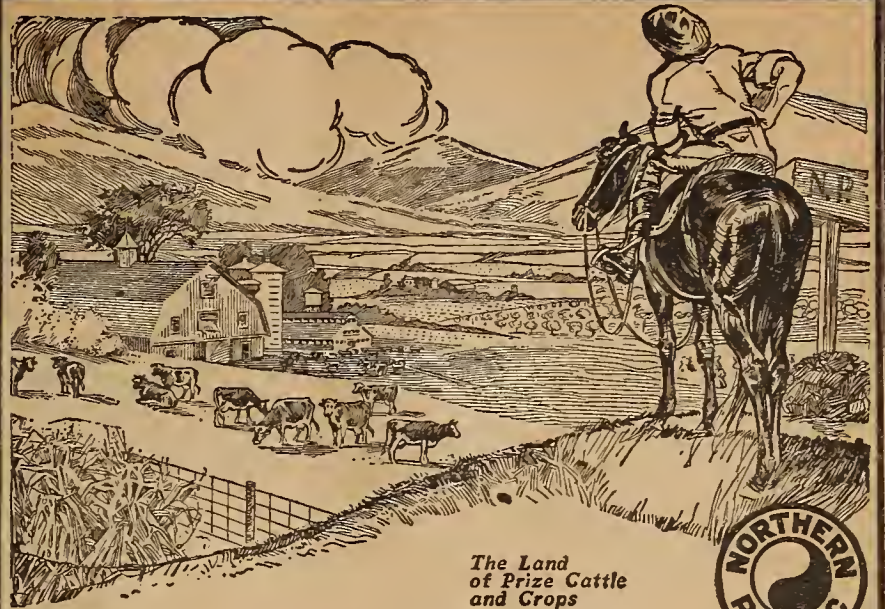
A New Pest of House-Plants

By C. M. Weed

DURING the last ten years the greenhouse white fly has become so generally distributed that it is now troublesome in a large proportion of northern plant-houses. It is a tiny white insect from tropical regions that finds life congenial in conservatories, although it apparently is unable to live outdoors through the winter.

This little pest is now invading houses that have window-gardens, and is likely to become the most serious enemy that house-plants have. It is likely to fly in through the open windows in summer or autumn or to be introduced on a new plant brought in from outdoors or bought from a florist. It seems especially fond of rose-geraniums, which should always be examined carefully before being placed in a window-garden.

In large greenhouses the white flies are killed by fumigating with hydrocyanic-acid gas, but this is such a deadly poison that I cannot recommend it for general use. Good results are secured by putting the plants in a tight box and fumigating with some good commercial tobacco decoction.



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Just lay it with an ordinary hammer, and you've solid roof comfort ahead for many years to come.

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Sample showing the pitch waterproofing and real mineral surface free on request.

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Farm Notes

The Handy Section Ladder

By E. H. Fox

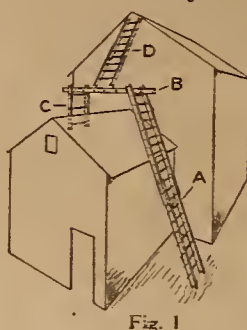


Fig. 1

I HAVING had considerable experience with different kinds of ladders in my work at painting and paper-hanging, I will describe how the common section ladder can be used to the best advantage on the farm.

I had my ladder made to order by a carpenter. In addition to the usual length, I had him make two short sections, or half-lengths. I find these very useful. The whole sections are six feet long and twenty inches wide. The inside lengths are seventeen and one-half inches wide, but the rounds extend through the side pieces to the full twenty inches. The side pieces are made of three by one and one-quarter inch spruce. The ends of each side piece are riveted to prevent splitting. The rounds are one and one-eighth inches in diameter and are turned from seasoned oak. The last few rounds of each section are made so as to fit the holes rather loosely and are used for fastening the different sections together.

I use these sections for scaffolding in paper-hanging, and by using a short length when necessary can make a platform suitable in length for almost any room. By placing boards on the ladder, I can make a good stiff scaffold. For outside work in painting buildings where a long ladder is required, I can raise five sections at once alone. If more are required, I get the ladder in a position so that the top extends above the eaves, then I take the required number of sections up the ladder and place them on the top. Then by turning the ladder over a few times I get it where I want it. After having

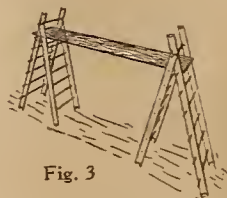


Fig. 3

pointed down as far as the top of the ladder, I go down and take off the bottom section and put a half-section in its place, then paint down to the end again and then take the half-section off. By doing this the work is always above the ladder, which does away with all ladder marks, and the painter is in a good position to work.

For high buildings and roof work I find this ladder the most convenient of any I ever used.

Fig. 1 shows this ladder arranged as I sometimes use it for painting the gable end of buildings where there is an annex. Ladder A from ground rests against the eaves of annex. One end of ladder B, for the scaffold, rests on ladder A. The other end is supported by short section C which rests on roof of annex. The foot of ladder D rests on a board placed on the rounds of B, thus making a platform. Fig. 2 shows how two of the sections may be

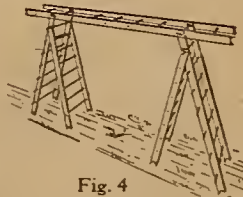


Fig. 4

used to form a temporary step-ladder. Fig. 3 illustrates a convenient arrangement of low scaffold. Fig. 4 is a clothes-rack for drying horse-blankets, burlaps, carpet and similar articles. As these sections are only six feet in length, they can be stored away very easily.

Where the manure can be spread in early spring on ground that has something to retain it, such as stubble, it will prevent washing of the land, and the fertilizing elements will readily enter the soil at this season.

Loans for Farm Improvements

By R. H. Wood

SOME bankers, it has often seemed to me, have been slow to adopt modern ideas. In many cases they have retarded agricultural development. I have known them to refuse loans to good farmers, and upon good security, for the purchase of fencing, silos, lime, fertilizer and improved live stock. I have known them to advise farmers to stick to wheat, potatoes, corn and beans. In the South they advised planters to stick to cotton and tobacco.

I know of a case where a man has borrowed five hundred dollars for a saloon license, with very little trouble and little security, yet the same bank advised a good farmer against investing one hundred dollars in a pure-bred bull calf. Fortunately there are bankers whose advice is better.

Short Loans are of Little Value to Farmers

Let it be noted, however, that there is much difference in men as to the use of money. Some men can make better use of five hundred dollars than others can make of a thousand dollars.

A certain man has eighty acres of fair land. He has such improvements as he has been able to make. His land cost him sixteen hundred dollars and is worth the money. He wants to fence the entire farm and to cut it into two fields. This will give him plenty of pasture and protect the crop upon his tillable land. He has two cows and wants to buy three more. He wants part of a car of ground limestone and some ground phosphate rock. He wants a little clover-seed and a few hundred good apple-trees. He believes in good fences, good tillage and good stock. He says that six hundred dollars would put his farm upon a paying basis. I firmly believe that with the improvements he desires, put upon the place as he would put them there, his farm would be worth over three thousand dollars.

The local banker does not loan money upon farm lands. He lends entirely upon secured notes and chattel mortgages. He loans for short time only, sixty days being the usual period. My friend, the eighty-acre farmer, has good security for six hundred dollars, and if he could get it for five years at six per cent. he could put his farm upon a paying basis.

Farmers' Money for Farmers

This is a typical case and a fair one, for this farmer is a capable and intelligent man, and he needs the money.

Again, to-day I was talking with a well-to-do farmer who has a large farm and most of the modern improvements. He said, "Of course, as for myself, I am past the need of such loans, but I have seen the time when such a loan as your friend desires would have been a great advantage to me. It would have set the date of my income from five to ten years ahead."

"To-day I have a little money in the bank, and I wish that some way could be arranged that farmers' money could be loaned to farmers."

These two cases illustrate conditions, demands and possibilities.

What the farmer wants, and what, eventually, he will have, is prompt loans without any disgrace or embarrassment, upon reasonable real-estate security and at reasonable interest.

This he wants, and with payments so arranged that he can feel safe in going ahead and improving his farm. Any system that does not satisfy these demands will not be of any permanent benefit. If the farmers but knew the value of their own assets, they would not be long in combining to devise a system that would be safe, stable and satisfactory.

Getting Early Sweet Corn

By C. M. Weed

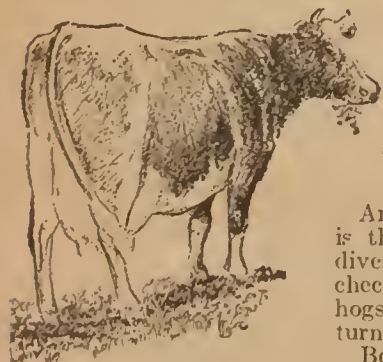
SOME of the most successful gardeners near Boston have found a good way of getting sweet corn on the market early enough to command a fancy price. After thoroughly plowing and harrowing the soil, they turn up ridges the shape of an inverted V where the corn-row is to be.

The soil thus elevated dries out quickly and absorbs heat much more readily than would a level surface. The seed is planted along the apex of the ridge and germinates promptly into young plants that thrive and ripen ears about two weeks earlier than the ordinary level-soil method. This plan may be easily adopted in any northern garden where the early corn is desired.

Some folks are so particular that they don't want to be served with the milk of human kindness unless it is certified.

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Another strong argument in favor of dairying is that it forms a most satisfactory basis for diversified farming. With the monthly cream check as a foundation, and the chickens and hogs to consume the by-products, everything is turned to the best account.

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Here is one man's experience, but let us send you our new booklet "Settlers' Stories" giving names of many men who have met with great success on Kuhn's California Project.

I am milking a small herd of common grade cows—part grade Jerseys and part grade Durhams, and my cream check amounts to \$15 per head per month.

These cows are getting alfalfa pasture and wild oat hay. One of the cows will calve in a month—two were fresh in January and two are heifers under two years old in the lot.

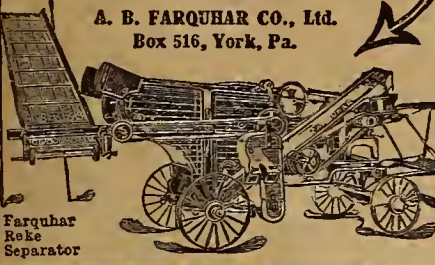
I am familiar with farming conditions throughout the West and know that dairy products can be produced cheaper here and a higher price secured for them than any place I have ever been.

I can keep dairy cows here for from three and a half dollars to four dollars a month the year round. It might cost a little more in the winter but would run as low as \$1.50 per month per head in the summer. A good dairyman can easily make \$100 a head clear each year with grade cows.

Yours sincerely,
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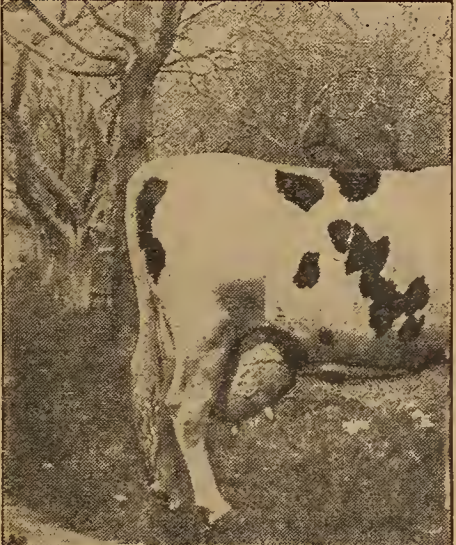
Gold in the Dairy Record

By Hollister Sage

THE cow which gives the most milk when fresh is not always the best cow. Her period of lactation may not be a long one, and her test for fat may be low. Anybody may guess what a cow will do, but nobody can guess correctly every time, and it is expensive not to guess right. The only way to find out what a cow really is doing is to keep a record of her transactions. And, after all, the labor and trouble required are not so serious as most of us fear, after the arrangements are completed. To begin, tack to the wall of the stable a record sheet. This must have thirty-one squares marked off opposite each cow's name. Near the sheet hang a pair of good spring scales, in such a manner that they cannot readily get off their hook. Here set down the amount of milk in pounds that each cow brings in. To reduce a given number of pounds to quarts, divide them by 2.15, as one quart of milk weighs just 2.15 pounds.

An Accurate Sample is Important

Then every week carefully take a sample of each cow's milk and test it by the aid of a Babcock milk-tester. Be sure to get a true sample. That is, get the entire milking into a pail or can, and stir it well, up and down, or pour it from one pail in to another. Next weigh in or pipe in your sample before the agitation has ceased, so the cream is thoroughly mixed with all of the milk. This will give a record of the butter-fat content of each cow's milk, and a glance will show whether one of the herd is shirking her duty three or more months in the year.

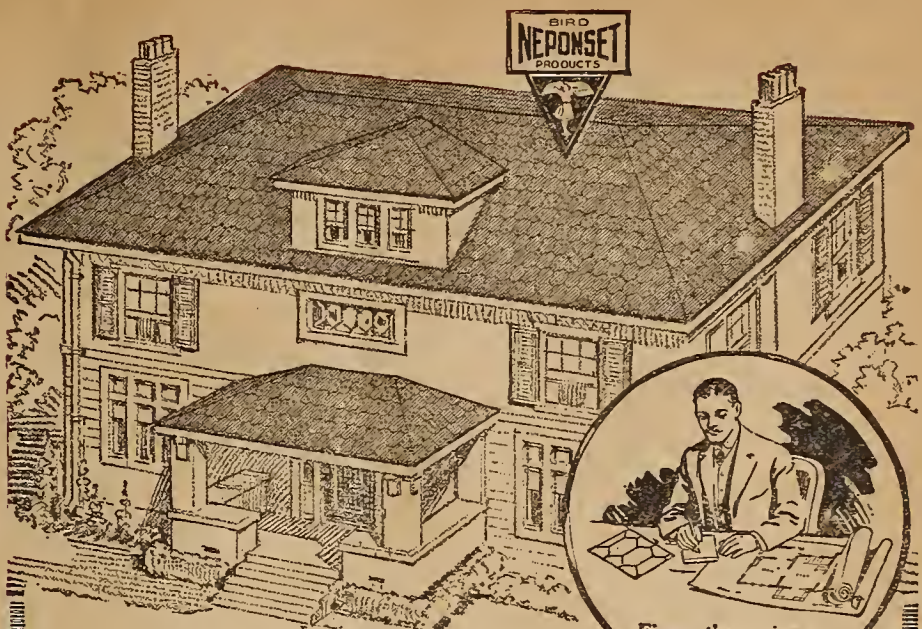


Her well-shaped udder showing prominent milk-veins is a good indication, but her record is the only true index of her value

The keeping of a dairy record will pay better than any other work on the farm, since it enlightens the owner as to the actual merits of each cow and measures the merits. When a cow has proved to be an inferior financier for her owner, no sane man would keep her. And no man needs to be told to keep a cow that has shown herself to be a money-maker for him. A fine animal was led out for my inspection a few days ago. I remarked that she had the marks of a good cow, but inquired whether anything was really known about her. "Certainly!" ejaculated the man in charge. "That cow gave 8,200 pounds of milk last year that averaged a test of 5.6 butter-fat." "Hm-m!" I said. "Good cow. Would you take \$200 for her?"

Good Blood More Valuable Than Good Beef

He looked at me and smiled, but the smile was not a smile of acceptance. "I wouldn't consider it for a moment," he replied. The cow was a registered Holstein, and I learned afterwards that her heifer calf sold two years ago for \$450 when a few weeks old. This man knew what the cow was. Every man ought to know it about each cow in his herd. The cows which made enviable records are the cows to keep, the cows to raise calves from. Everybody knows this without guessing. The part we do not know is the part that is most essential, and this the record supplies. Don't guess at the records when you may be sure of them.



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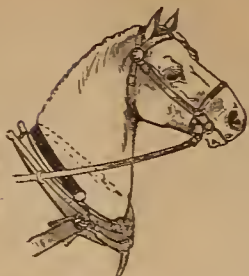
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For Curing a Sore Neck

By O. W. Cason



THE illustrations show a handy contrivance to use when a horse has a sore on the top of the neck. It is made of a seamless sack or piece of canvas folded five inches wide. Strong iron rings are sewn into the ends and two-inch snaps are

attached to the rings by means of short leather straps. The snaps go in hame-rings that the breast-strap is on. Pass the other end up over the neck (just in front of the



collar as shown in first sketch) and down the other side, and snap in the hame-ring.

Have it short enough so that it raises the collar up off the sore, and you can work your horse every day and not cause him any pain, and the sore will soon heal. I have tried this out, and it works splendidly.

Tests of Food for Work-Horses

By C. N. Lurie

IN GOVERNMENT tests of feeds for work-horses, made with artillery horses at Fort Riley, Kansas, it has been found that the cheapest ration, and the one which gave the largest gains, consisted of eight pounds of corn, two pounds of oats and ten pounds of alfalfa-hay, and cost thirteen cents per head per day. The tests were made with ten lots of horses, with about seventy-five in each lot, and seven lots containing from seventeen to twenty horses each. The gain made was 25.6 pounds per horse in 140 days.

A ration consisting of oats, corn, wheat-bran and timothy-hay in the ratio of 4:6:4:12 produced six pounds of gain in 120 days, and the animals showed the best condition of any in the test, but the ration cost nineteen cents per day.

When oil-meal was used to replace a portion of more expensive grain, at the rate of about one pound per day, the horses showed excellent condition, and there was no evidence of softness. This cheapened the ration about two cents per day over the ration previously used.

Azoturia or Horse Paralysis

By Dr. A. S. Alexander

AZOTURIA is preventable by proper feeding and management. It takes its name from the French word *azote* (nitrogen). It is characterized by swelling, hardening and loss of power of the muscles of the hind legs. It is purely due to overfeeding on nitrogenous feed during one or more days of idleness. Following a holiday or great storm in any large city, it is not uncommon for hundreds of work-horses to go down paralyzed and die.

Such horses have been fed their usual rations of oats, bran and hay or other feed combinations, but have not been exercised.

It is Caused by Too Much Nitrogenous Food

Consequently the nitrogen products (urea, etc.) of the feed are not used up in work. They overload and overtax the excretory organs and blood-vessels and generate toxic poisons which permeate the tissue when exercise is given. The nerves of nutrition (trophic) are injuriously affected by the poisons. The urine is colored dark red-brown by coloring matters of the blood from the congested kidneys. In the most severe cases the horse becomes delirious and speedily succumbs.

How to Prevent It

In less severe cases recovery takes place in a few days, or the horse may partially recover, but gradually become lame and useless from wasting of the muscles of the stifle, thigh and hip. Losses from this disease are absolutely unnecessary. They may be wholly prevented by stopping the feeding of oats and other rich, nitrogenous foods and enforcing exercise when there is no work for the horse to do. In many large stables horses are now fed hay, bran-mashes and roots without grain during holidays or stormy weather when work temporarily ceases. They are also given walking exercise two or three times a day in the aisles of the stables or out-of-doors. This sensible practice will end losses from azoturia. It should be followed on the farm as well as in the city.

Treatment for an Affected Animal

The attacked horse that has been "feeling his oats," prancing and neighing on going out for the first time after a spell of idleness, suddenly droops, lags, sweats profusely, knuckles over at the hind pasterns and, if driven farther, goes down paralyzed in one or both hind legs. In rare cases the fore legs are affected. A horse so attacked should be immediately stopped, unhitched and rested. Keep him on his feet. Give a pint and a half of raw linseed-oil at one dose. Cover the loins and hips with blankets wrung out of hot water, or rub with stimu-

lating liniment. If this is done, recovery may quickly follow; but the disease rapidly becomes worse with continued exercise. If the horse goes down, bed him comfortably in a roomy box stall, and send for a graduate veterinarian. The urine will have to be drawn off with a catheter two or three times a day, as it is not passed by the paralyzed animal. Special remedies are needed for the treatment of a severe case, and slings will have to be used as soon as the horse can stand. Prevention is of paramount importance.

Carrots for the Dairy Cow

By A. Cornell

IT WILL be a long time yet before everyone who needs a silo will feel able to have one. In the meantime we must do our best with such as we can afford. For the small farm a root crop is a pretty good substitute. For irrigated sections we are not so sure but that it is more practical and economical than the silo, especially for sections where severe freezing is not the rule.

Carrots are Slow in Starting

Last year we had our first experience, here in Idaho, both with irrigation and with this sort of crop. About the middle of June we planted an acre of carrots. That is a little late if one expects to get the greatest tonnage; but, having weedy ground, we plowed it early and kept it cultivated until that date in order to kill as many weed crops as possible before planting the seed. By waiting this late the carrot crop came on a great deal faster and held its own with the weeds, much better than it would have done earlier in the season.

In fact, on ground that is infested with weeds, this is very important, as carrots are very deliberate in starting off, and the field is apt to be literally green with weeds before ever one carrot gets to the light of day. And if the soil forms a crust they are pretty sure to remain an unseen quantity. But, once started, they hold their own well.

We gave carrots the preference over sugar-beets because they have as high a feeding value, and they are not covered with fine roots that cause so much dirt to cling to them. Carrots are especially rich in carbohydrates which make them balance well with alfalfa.

Sowing and Harvesting

Our patch made about eighteen tons; it would have been much larger had we had the pure White Belgian seed instead of a mixed lot. We planted the rows twenty-two inches apart and used a beet-cultivator and dug them with a beet-digger. We use a garden drill set to cover one-half to one inch and drill the seed in quite thick, using about five pounds per acre. They should be thinned to four inches in the row.

Let them stay in the ground as late as possible, then dig, and store in a well-ventilated root-cellar. It must be well ventilated, otherwise they are likely to rot. A moderate amount of freezing will not hurt them. In cutting them for feed we use a corn-knife and split them lengthwise.

To Prevent Choking

A cow can handle a much larger piece of cut lengthwise than in cross-sections. We are especially careful not to allow the small, round ones to be fed without splitting, as there is more danger of her choking on such pieces than on larger, irregular pieces.

We have been feeding twenty to thirty pounds per day to each cow in addition to a good supply of alfalfa. Danish dairymen feed as high as eighty pounds per day, but they do not have a roughage that equals our alfalfa.

Carrots are not only relished by the cows, but are a good feed for all other stock, especially for horses, sheep and geese. The White Belgian carrot has a large top which is as good as the roots. They do not taint the cream and butter, but give a rich, tasty color.

Rheumatism Among Hogs

By J. W. Ingham

ONCE I had the genuine hog-cholera among my hogs, but the disease that has appeared most often is rheumatism. I have had two uncommonly severe cases. Both animals were sows about seven months old and expected to farrow in the May following. The one attacked first showed a little lameness in one hind leg, which soon extended to the other, then to all her legs and apparently to every joint in her body.

There was a stiffness in her neck, which she could hardly bend sideways, and the muscles seemed so sore that any movement or attempt to use them gave the animal pain.

A few days after the first one was attacked, the other became afflicted in the same manner, but not quite so badly. They would lie generally on the side, except when driven up, and then they squealed with pain, caused by their efforts to use their muscles and move their joints.

The Pen, Though Roofed, Was Cold

They had but little appetite and not much thirst, but would eat a small quantity of meal and milk when driven to the trough. One got well, the other died after being sick several weeks. The pen in which they

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had been kept, though well roofed and bedded with straw, was open and cold.

Afterward I had a large sow and two smaller hogs which I let out of the pen to give them exercise, as I intended to keep them through the winter. The weather was warm for the season, and the wind from the southeast. It had been raining, but the rain had ceased. They were so overjoyed to get their freedom that they kept on the run and did not come into the pen at feeding-time at night. It turned cold during the night, and the wind blew through an open door directly on the sleeping hogs.

All of the Afflicted Animals Lost Flesh

In the morning they did not come out of the sleeping-apartment to eat. The two smaller hogs seemed stiff in every joint, but managed to get up and limp out to eat. The large sow when driven up staggered and fell, got up and staggered out to the trough, where she lay several days refusing to get up and eating nothing during that time, but finally got well.

The smaller hogs, not being afflicted so badly, got well soonest, but all lost flesh during their affliction. Once I had a sow so badly off she could not be driven, nor helped up, but I rolled her over every day. She would not eat when at the worst stage, but after lying four or five days without food slowly recovered. More sows than hogs have been afflicted with rheumatism, and more boars than geldings. Some sows seemed more liable to an attack of lameness at a certain period of their pregnancy than at other times, but did not lose their pigs.

Once I had a lot of shoats which, on account of deep snow and cold weather, had been confined in the pen for several weeks. They were so healthy and strong that some of them at feeding-time would stand on their hind legs, with their fore feet against the side of the pen and heads up looking eagerly for the feed to come.

What Hog Experts Recommend for Treatment

When the snow had gone there came a pleasant day, and I foolishly turned them all out to exercise. Full of strength and joy, they kept on a continual run all day. Next morning none of them would leave their beds to eat breakfast and were driven out to the trough. All were very lame. Some could hardly walk at all, and the boar was the worst of any. They all lost flesh, but eventually all recovered.

Doctor Law says: "Rheumatism in swine owes its development to cold and wet, cold drafts and disorders, especially of the digestive and respiratory organs," and recommends for treatment physic with castor-oil.

Doctor Dadd says: "Keep the animals on a boiled diet, which should be given warm. Remove the cause by avoiding exposure and filth, and physic with powdered sulphur."

Prof. F. D. Coburn says: "A tablespoonful of cod-liver oil should be given to each pig once or twice a day in its food. The cod-liver oil, besides curing the rheumatism, both acute and chronic, also improves the condition wonderfully. Provide well-littered, warm housing, from which the pigs can emerge into the yards at will. Give boiled or steamed food and sour milk."

None of the doctors agree as to the particular kind of physic to be given, and so we may conclude any kind will do if administered in time.

Crop rotation should be so managed that it will sustain the greatest number of live stock, which will mean a double profit from the soil while building it up and increasing its value.

The Ohio Valley Flood and 1913 Crops

[CONTINUED FROM PAGE 5]

flood district the loss of life among farmers and their families was very small, if any.

Of the eighty thousand persons seeking aid and homes, the number of farmers is also small, though classified figures on this subject cannot be had. Probably less than one per cent. of farm families in the flood district were made homeless.

The Percentage of Farm Property Affected

The investigation revealed the surprising fact that the rains did no unusual damage to farm property compared with other spring rains, and the damage by flood was confined entirely to property in the path of the flood. Bridges of concrete and steel, towns, buildings, live stock, farm implements and everything movable suffered alike. Nothing could resist the swift rush of the waters. But the percentage of flooded farms was small, somewhere between one tenth and one half of one per cent. of all the farms in the States affected, particularly Ohio, Indiana and Kentucky. The extent of injury to the damaged farms ranges from a negligible quantity to a seventy per cent. loss, not over that, as the land is still there.

So far as could be ascertained, all the farm buildings and improvements damaged will be rebuilt or replaced. Over ninety per cent. of the farmers in the path of the flood were considered by their neighbors as fairly well-to-do and financially able to make a fresh start and repair their losses at once. The loss of soil can of course never be

replaced. The tons and tons of rich, dark, sticky ooze left on the floors of dwellings, on the paved streets of the cities and which ruined so many million dollars' worth of merchants' stock are typical of the thousands and thousands of more tons which were carried away to settle temporarily in the river-bottoms and finally to reach the sea. It is lost to the farmer forever. Future generations will suffer for lack of it.

How the Trees Reduced the Damage

Were it not for the trees along the banks of the rivers the losses would have been even greater, but every tree was a sentinel to stop a small portion of the flood. The trees which were on the true banks of the rivers were, during the flood, from one-third to one-half way to the center of the stream. Every tree stopped some of the debris, checked the velocity of the water somewhat and thus tended to check the erosion.

Had there been more large trees along the banks of all the rivers and levees the damage from flood would have been much reduced.

What Can be Learned from the Flood

The effect of the rain on farm property in general is noteworthy. Orchards and woodlots were not washed to any noticeable extent even on very hilly ground. Corn-stubble was washed severely on hilly ground, but unharmed on gentle slopes and level land. Spring-plowed ground was badly washed where there was even very slight slope. The lowlands were for the most part benefited by the sediment. Some standing water apparently killed a small amount of wheat and alfalfa, and some of these crops were also covered by sediment. The only loss will be the cost of replanting.

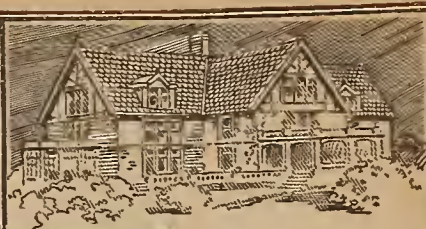
Wire fences stood the flood much better than wooden fences. Woven-wire fences came through in better condition than barbed wire.

Outside of the district actually flooded the roads were in excellent condition one week after the rain had ceased. Macadam roads were exceptionally good, and when oiled were perfect. Gravel and dirt roads were somewhat washed, but were, nevertheless, in fairly good condition.

Poultry and swine houses on low ground were made damp and, in some cases, uninhabitable.

The warm weather following the rain resulted, as this is written, April 7th, in a luxuriant growth of winter wheat, alfalfa and pasture.

Farm conditions through Ohio and northern Kentucky are in general promising, and crop prospects are good. From present appearances all crops will be normal and at least equal to those of 1912.



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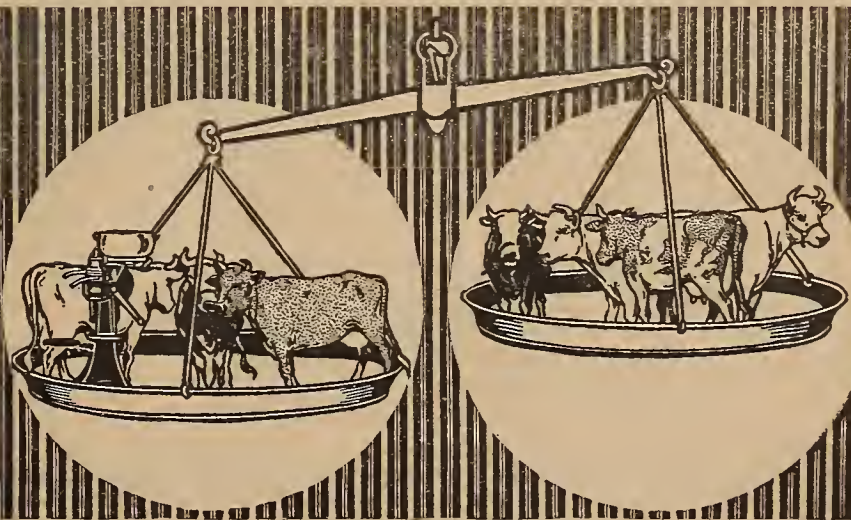
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Poultry-Raising

Raising Wild Ducks

By Laurence Grand



WHETHER raising wild ducks is profitable from a financial standpoint is a question. But they sell at as high a price as any; I get seventy-five cents apiece, and if they are scarce I get one dollar.

I live in the river country in Illinois where wild ducks are still to be found in the season, and our start came from a nest of eggs. We change our drakes every two years.

Wild Ducks are Good Layers

The wild duck is a prolific layer, but until nearly time to set they will lay anywhere they happen to be, in the road or in the barns. The first thing in the morning we look for the eggs, which are of very fine flavor.

I can raise the ducks without a mother, by hatching the eggs in the incubator, but when running the incubator with duck eggs the per cent. of moisture must be very much higher than for even tame duck eggs. Never wash one of the eggs, no matter how dirty



Wild Mallards—drake to the right, duck to the left

it is, for it will not be likely to hatch. I never keep over a dozen wild ducks through the winter unless a large number of eggs has been ordered ahead. I get \$1 a dozen for the gray Mallard duck eggs, and \$1.50 a dozen for the black Mallard eggs.

Wild Ducks are Good Mothers

The hens are apt to steal their nests, but you need not worry about losing the ducks, for the mother will come up to the porch

and promenade in front of you with her babies, of which she is very proud.

Feeding the young ducks is a problem, for many things do not agree with them. Coarse ground feed, dry at first and then wet or dry, gives the best results. Feed sparingly, and give them water often, but not enough at a time to let them swim in it. I shut the little ducks up, but have a pen large enough to enable them to get plenty of grass, and the mother can jump over the boards. Do not handle the little ducks any more than enough to make them tame.

Wild ducks raised on the farm do not have the fishy taste that spoils the flavor of the ones shot.

We have no trouble whatever with the wild ducks that we raise flying away. But the hunters will shoot them if they can. The wild ducks do not wander far from the house at any time, and at the first sound of a gun we call them, and they come at once.

Nearly all farmers who raise ducks here in Illinois sell them to the hunters.

I do not consider them especially profitable, but every farmer should raise enough so as to have Mallard duck whenever he wants it, for the meat is excellent.

Lime-Sulphur as a Poultry-House Spray

By F. M. Sherman

SEVERAL years ago, while spraying the orchard, the thought struck me, "Why not spray the chicken-house?" So when through in the orchard we went into the yards, using the same strength solution as had been applied to the orchard. The machine forced the solution into every crack and crevice in the entire building, doing a decidedly more effective job than can possibly be obtained in any other way.

Should a bit of lime-sulphur reach Mr. Mite or his cousin, Mr. Chicken-Louse, you will not need to lose any more sleep or worry in the least as to the future depredations he will commit. Not only that, but should the solution come in contact with any larvæ or nits they will never produce a live mite. So you not only clean out the present pests, but eradicate most of the crop of future trouble, at the same time, disinfecting the premises thoroughly.

How to Make 5-5-50 Lime-Sulphur

We usually make our solution at home, as it is not only stronger, but much cheaper. Should you wish to use a considerable amount, take five pounds of lime and slake well, add five pounds of sulphur and enough water to fill a large kettle reasonably full. We find a twenty-gallon kettle about right. Bring the solution to a boil, and keep it up for an hour, or until the solution is a brownish black; to this, add enough water to make fifty gallons, and your solution is ready. It is strong enough to kill any chicken pest. This is what is generally called the 5-5-50 solution.

We soon discovered, when using the sprayer, that if the solution came in direct contact with the skin it caused most disagreeable burns, much more distressing than any direct application of heat. This is avoided by thoroughly covering the hands with tallow. When we are working in the orchard for any length of time we always apply tallow to our faces also.

"Mother" Bantam Rooster

By A. E. Vandervort

POU TRY MEN see many curiosities, but here is an exceptional one. A breeder in a neighboring town had a Buff Cochins hen that became broody the fore part of August, but on account of the lateness of the season he did not care to set her, so broke her up.

Her mate, a Buff Bantam rooster, at once took possession of the nest, occupying it steadily from morning until night for three



The Buff Bantam and his brood

days. To be sure that he meant business a china egg was placed under him. Still he continued to set, so some eggs were placed under him. This was on August 17th, and six eggs were placed under him. He sat as steadily as an old hen, and on September 7th five of the six eggs hatched. As a "mother" he proved very successful, raising every one of the five chicks. He was a great curiosity to the many who saw him, with his five children, caring for them even better than an old hen and crowing as proudly as any cock.



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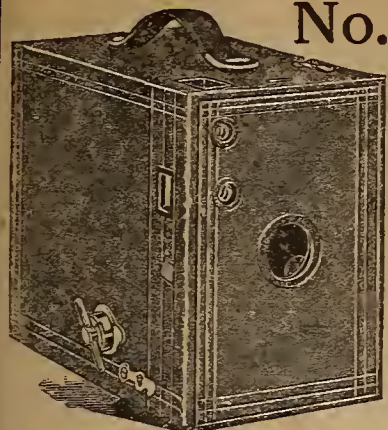
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GARDENING

By T. GREINER

A Matter of Taste

ENDIVE is freely offered in our city markets, and many people like it for salad when lettuce is not to be had. I prefer lettuce almost any time, and try to have a nearly constant supply by sowing seed often.

I feel guilty of neglect, however, when I fail to sow a little endive-seed. The right time is in May, June or July, according to time you want to use the plants. Try to secure some endive-plants from a near market-gardener who is well recommended.

Select a rich spot in the garden, and make the rows a foot apart. The plants in the row may stand ten to twelve inches apart. Stir the soil around the plants frequently, and they will grow briskly.

When large enough so that they will touch or overlap in the rows, blanch them by gathering the leaves together and tying them over the heart of the plant. In less than two weeks' time they should be blanched enough for use. You can easily have good endive if you want it.

Also Weed Early

Weeding is done easily and more quickly before the weeds are making much of a show and before they have had a chance to do much damage. Let the weeds once get large, and it will be a tedious and disagreeable job to clean them out of the rows.

The few scattering radish-plants, which I usually try to secure by mixing a very few radish-seeds with the beet, carrot and onion seed, show the exact location of the rows of these vegetables a week after sowing. If the soil is dry on top and perhaps a little baked, I go over the rows promptly with my hand wheel-hoe, running it pretty close to the row of plants, thus breaking the crust and incidentally destroying the weeds that may also have already started. This process is repeated about a week after, and all weeds remaining in the rows are pulled up by hand or cut out with a hand weeder.

Now for Thinning

The most important, and often the most neglected job we have to look after at this time in the garden is the proper thinning of the plants in the rows of lettuce, radishes, beets, carrots, kohlrabi, onions and various other things that are started from seed sown in rows.

Most of us use seed more freely anyway than is necessary or advisable. We do it usually to make sure of a full stand. But better have breaks and vacancies here and there in the rows than have your plants overcrowded. In short, thin early, and thin thoroughly.

Tomato Troubles

Our tomatoes in the field are sometimes attacked by leaf-blight, or mildew, which works from the lower leaves up. The leaves turn yellow, then brown and shrivel or dry away. Spraying with Bordeaux mixture, if thoroughly done, will check the spread of this disease. Usually we manage to get the full crop on mildly affected plants.

More fatal to affected plants, but fortunately more rare here, is the bacterial blight which attacks tomato and potato vines and kills them in short order. I have never found a remedy for it. Only a small percentage of the plants are ordinarily taken in this manner. It is not a serious trouble of tomatoes with us.

Fertilizers Good for Melons

Here in western New York, where we have so much trouble to get melons to mature, the use of phosphate fertilizers can always be recommended. I use acid phosphate, preferably mixed with the stable manure. If the soil is already quite rich from clover-sod plowed under, or previous applications of farm manures, apply the phosphate separately, broadcasting after plowing.

It can also be used in the hills, being worked into the soil with the hoe or cultivator. I have at times used bone-meal as a hill application for melons and cucumbers, or bone-meal and tobacco-dust, about half and half. Tobacco-dust is readily obtainable in the tobacco-growing regions and is rich in potash. Its free use has a tendency to repulse some of the worst insect pests of melons and other vines, such as flea-beetle and cucumber-beetle.

Pruning Currant and Gooseberry Bushes

The best fruit on currant and gooseberry bushes is grown on canes not over three years old, and preferably on lower portions

of the canes, not at the very tips. For these reasons we remove some of the oldest canes in our annual pruning. Three to five good canes on a bush are better than more, but some judgment is required to do the cutting just right, according to the condition of each individual bush or plantation.

I also cut each cane back somewhat, especially the tall ones, removing more or less of the tip. English gooseberries are sometimes grown in tree form. I have them. The wood of course cannot be renewed, and the tree will not hold out for as many years as if grown in bush form.

When gooseberries make much wood growth, it may be necessary to do considerable thinning and opening up in the center, for the purpose of giving us a chance to gather the fruit without getting our hands scratched. Always remove the oldest wood.

How I Raise Early Vegetables

By W. F. Henderson



STARTING plants under glass is an old story, but a simple way of protecting them from the frosts and cold incident to early spring is not so well known. I take boards five or six feet long and eight to twelve inches wide and nail them together, as shown in the sketch.

With these covers I protect tender or newly set plants during heavy or cold rains and on cold days and nights. I use them to hurry along corn, beans and squashes, or anything early and tender. When the covers are no longer needed I draw the three nails which were not driven home and either use the boards for other purposes or store them away until next spring.

The Barn-Swallow

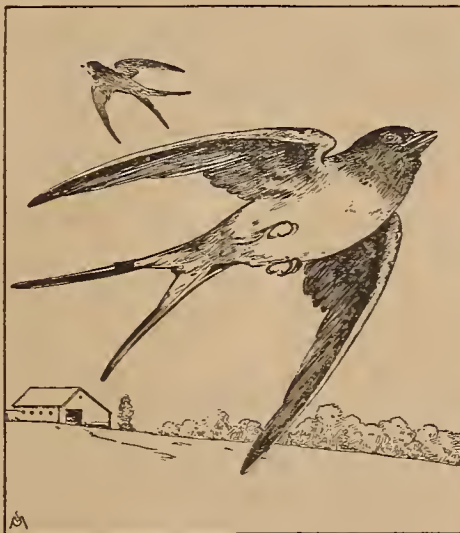
By H. W. Weisgerber

NO DOUBT the most of my readers have seen club-swingers perform or have done some Indian-club swinging themselves. If so, they know that every motion is one of graceful curves, that there are no angles or sharp turns in the various movements. This is the way of the barn-swallow's flight. It is the most graceful of any bird. There is not a sharp turn, angle or false movement in it, for it is composed of the most graceful curves and turns imaginable.

They wheel to right or left, dip to the earth and rise skyward, but all on well-rounded turns.

They fly swiftly, but always slow down before making a curve, so as to avoid making a sharp turn. And thus they fly hour after hour, either on pleasure bent or in "hawking" for flying insects.

And withal they seem so happy with their lot, for they are always uttering their joyous twittering notes as they navigate the air.



But while they are such tireless fliers and perform so gracefully, they are very awkward when on their feet; in fact, they can scarcely stand at all, and flounder about, using their wings a great deal to help keep themselves up while they are gathering the soft mud pellets of which they build their nests upon the timbers inside the barn.

Their food is all taken while they are on the wing, and consists of flying-ants, small beetles, moths and mosquitos. "Most of these are either injurious or annoying, and the numbers destroyed by swallows are beyond calculation."

Shut Your Eyes and Fertilize

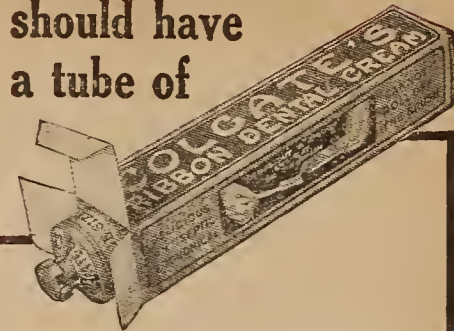
By J. F. Williams

THE gospel declaration, "he who sows sparingly shall reap sparingly," applies with great truth to seed-sowing and fertilization in the garden.

An old lady once put all the sugar her judgment would allow into her pieplant pies, then closed her eyes and put in another handful—a good rule in fertilizing a garden.

Every farmer should have two affinities—his wife and his farm.

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Marketing

There's no Justification for Tariff Fears

By John P. Ross

STORM, fire and flood which have wrought so much havoc lately, have had less effect in disorganizing the food supply than might have been expected. The sheep market has, with the exception of a rather sharp rise in the early part of April, remained remarkably steady, and no tendency toward any great rise or fall in prices has developed.

For a few days the difficulties of transportation caused some trouble and a sudden jump in prices; but by the middle of April they had settled down to about the rates that have prevailed for some weeks past. On the whole, something a little better than the early April prices were claimed, especially for mature sheep. Top sheep were selling at \$6.95; bulk at from \$6 to \$6.75; top lambs at \$9.25; bulk at \$7.75 to \$9.

The wool market is quiet. All interests are pondering over the possible or probable effects of the tariff changes. But in the world centers of the trade the outlook is regarded as most encouraging. It is worthy of note that in the last series of sales of colonial wool in London, out of 50,000 bales taken for export only 4,000 were for this country.

The Tariff is Like a "Stuffed Club"

The effect of the advent of free meats is, of course, a matter of great interest to all concerned, which is the entire population of the country, and anything that may help to cast a ray of light on the subject is of value, because any change in tariffs always produces more excitement than is justified by the practical effects produced.

At times it has been known to prove something of a "stuffed club" in causing a panic in some oversensitive trade. In the present case there are certain circumstances which should tend to calm the fears of such sheepmen as are inclined to believe that free mutton is going to knock the bottom out of this business; and I feel inclined to cheer them up.

A cause for these optimistic views is to be found in a study of the latest reports of the English meat markets, where for many years foreign meats, on the hoof and as frozen carcasses, have been selling by the thousands of tons. In considering the following figures it must be remembered that Great Britain's supply of sheep in proportion to population is far greater than ours, so that not the scarcity but the superiority of the home-grown article is what causes the great difference in prices; and that we are quite well able to produce as good food sheep as our English cousins if we will take the trouble to do so.

Some Interesting Values

Here are the comparative prices of native and imported carcasses of sheep and lambs at wholesale in the London central meat market last month.

SHEEP VALUES IN CENTS PER POUND

English—Wethers, 15 to 16; ewes, 11 to 12½.
Scotch—Yearlings, 17 to 18; wethers, 15 to 16.
New Zealand—All kinds, 8 to 9.
Australia—All kinds, 6½ to 8.
River Platte—All kinds, 7½ to 8.

LAMB VALUES IN CENTS PER POUND

English—22 to 24.
New Zealand—12 to 14.
Australia—11 to 12.
These have been about the range of prices for some years.

The increase of population in Australia and New Zealand is greater in proportion than that of sheep; and as regards South America, the chairman of the River Platte Fresh Meat Company, one of the largest exporters of frozen meats, writes: "Sheep and lambs on the average are too high in price to send over unless the market price obtainable is higher."

All this seems to point to the conclusion that none of these exporting countries are likely to crowd their goods into a market where more desirable stuff is selling right along at prices lower than those they have been getting for years, and the more so since they are finding it difficult to meet the demands of their old customers. Moreover, frozen food of any kind is never so good as the fresh.

The Hog Market Unchanged

By L. K. Brown

DURING the past few weeks there has been but little change in the hog market. Prices in Chicago have varied within a seventy-five-cent range. Light hogs have continued to maintain their premium be-

cause of the strong eastern demand for this class, but prices fluctuate considerably.

Weights are Running Heavy

Whenever shipping demand has lagged the packers have refused to absorb these except at sharp reductions. During the flood few or no hogs were available at Indianapolis, Cleveland or Cincinnati, consequently Chicago was forced to handle this demand and prices advanced sharply while the demand lasted, which was for several weeks.

Medium and heavy weights have had the most stable market—they have not participated in the sharp advance or declines to any degree.

The heavy storm the second week in April in the West had its effect in curtailing supply and boosting prices, but with the coming of better weather this condition disappeared. The growers have kept the market even by holding whenever the supply has been large enough to cause a material decline. Continued heavy feeding has raised the average weight until it is now the

heaviest it has been for several years for this season of the year.

Although hogs are coming in the heaviest in weight in years and are well finished before marketing thus yielding a high percentage of lard, the supply of that commodity has gradually decreased until it is the shortest in several years. This shows its enormous consumption the past few months.

The Hog Supply is 40 Per Cent. Less Than Last Year

While the professional speculators are continually endeavoring to hammer down the prices of provisions the reports of the stocks now on hand would indicate contrary action. When all cuts of pork are considered, the supply is nearly 40 per cent. under that of one year ago.

Southern demand has been slack lately, but this is considered as temporary and will soon enlarge. With such a broad demand and moderate supply it does not look as if prices will decline until the fall pigs and fat sows make their appearance after weaning.

What is Being Done Toward Better Markets for Farm Products and a Better System of Farm Credits

By D. Stockwell Burch

Associate Editor, Delegate for Farm and Fireside

A National Movement Inaugurated: An earnest and well-organized national movement is on foot to bring about better markets for farm products and a better system of farm credits.

The persons and organizations back of this movement include farmers, editors of co-operating farm papers, governors and their representatives, transportation experts, presidents and deans of agricultural colleges, bankers, officers of farmers' associations and others interested in public welfare.

Establishing a Working Plan: The First National Conference on Marketing and Farm Credits was held in Chicago, April 8, 9 and 10, 1913, under the auspices of the co-operating farm papers. It was attended by 415 delegates representing the interests cited above in thirty-four States of the United States, two provinces in Canada and one state in Mexico. The purpose of the meeting was to take an inventory of all available information on the subjects under discussion, to sift the useful data from the worthless and to formulate a working plan.

Facts About Marketing Which Were Accepted as Correct: A co-operative enterprise is most successful when it includes people of one nationality, one united purpose of some common tie holding men together. The mixed nationality of American people is responsible for the slow growth of co-operative enterprises in America as compared with Europe.

Farmers and consumers lose a billion dollars every year because of ineffective methods of marketing.

The tendency is to pay the producer the least he will take and to take from the consumer the greatest sum he will pay and yet continue to buy.

Facts About Farm Credits Which Were Accepted as Correct: Help the farmer to own the farm he lives on, thus reducing the number of renters, and you take the greatest step of all toward better social conditions, better roads and better farms.

The average rate of interest in the United States on money secured by farm mortgages is within six and one-half per cent., and in the more settled communities five per cent.

Things Which Speakers Urged Ought to be Done Toward Better Markets: The Government ought to take the matter of market quotations into its own hands and out of the hands of "gamblers."

The Government ought to define standard market packages and classifications so that the farmer will be able to pack and grade his products accordingly, thus eliminating repacking, waste and expense at the markets.

Things Which Speakers Urged Ought to be Done Toward Better Farm Credits: Credit should be more easily obtained, mortgage loans should be for longer periods of time and rates easier.

Postal savings bank deposits should be loaned to the farmers on farm mortgages under a system similar to the Foncier system of France, which requires that the money be used only for improving the farm or the farm equipment and that adequate methods of soil conservation be practised.

Long-time loans should be "amortized," which is the banking term for paying them off gradually by a small payment over interest each year, thus reducing both the capital and interest at the same time.

The Substance of the Resolutions Which Were Passed: The parcel post should be improved and rates made cheaper.

The United States Department of Agriculture should collect and distribute through its Office of Markets information on all farm problems.

State and local co-operative organizations and marketing societies should be formed as auxiliary forces in the better-markets campaign.

Both the state and federal governments should give immediate consideration to the provision of adequate means through which farmers may secure loans under favorable conditions.

What the Conference Actually Did: It found that in general the four great interests—producers, transportation companies, commission men and consumers—act independently and have not attempted to co-operate.

It found that among the Jew farmers of the United States there are already in operation seventeen co-operative banks practically identical with the Raiffeisen Banks of Germany.

It found that the cost of taking the products of the farm to the consumers is unnecessarily large, and the methods employed are wasteful.

It provided for the appointment of a committee to lay the results of the conference before President Wilson and Congress in an effort to secure needed legislation.

It provided for the publication in the form of inexpensive books of all the information brought together at the conference.

What the Government Has Done and is Doing: Congress appropriated under the agricultural bill \$50,000 for the establishment of an Office of Markets and \$25,000 to investigate the problem of farm finance both in the United States and abroad.

An Office of Markets in the United States Department of Agriculture has already been established. About twelve experts will be appointed in a few weeks to organize and begin the work.

Secretary of Agriculture Houston promises: We are going to have a more direct route from the producer to the consumer. Every unnecessary middleman will be eliminated.

Plans for the Future: The second National Conference on Marketing and Farm Credits will be held in Chicago next year, probably in April.

An international congress on marketing and farm credits will be held in San Francisco in 1915 under the auspices of the Panama Exposition.

Cheap Cattle are Coming from Somewhere

By W. S. A. Smith

THIS is the time of year when the grass on meadows and pastures begins to appear luxuriantly and farmers worry before the end of May because it seems to be wasting if there are not enough live stock to eat it up. There never was a greater mistake than this. There is very little food value in the first of the grass and cattle seldom hold weight during May.

We have this May an extraordinary demand for stock cattle and prices are high. Any man who buys cattle either to grass or feed is naturally optimistic, he generally figures on an advance in prices (which he does not always get) to make him a profit.

Provide Now for Fall Pasture

This year a man must be very optimistic to figure on any advance above present extraordinary prices. He would very much better figure on cheaper cattle. I cannot tell where these cheaper cattle can come from but I have always observed that when everyone is figuring alike something happens to upset their calculations.

I will need lots of cattle this fall and hope to get them when I can see daylight through things and may have to pay these prices, but at present nothing would tempt me to buy cattle at the present prices merely to eat up grass when this grass either as grass or hay may be used up six months later at a greater profit.

The average pasture in the corn-belt states fails to produce much beef or milk after August simply because it is eaten so close during the early summer. The most money I have ever made from pasture has been made during the months of September, October and November, and you cannot have good pastures in these months unless you save it in the early summer.

Numbers of men believe these prices will hold and are buying stock cattle at eight cents. They may be right and make money, but it looks like a long-shot "nothing venture nothing gain."

Don't Dispose of Good Heifers Hastily

I have in my feed yards fifty-six head of prime two-year-old Hereford heifers, average weight 900 pounds, fed six and a half months, worth on the Chicago market around nine cents, and yet I would be perfectly justified with present prices for stockers and present prospects in taking these heifers off feed, turning them out on grass and breeding them in June to a good bull, for I don't know where such heifers for quality could be duplicated at the price.

These cattle were bought last November in the sand-hill country in Nebraska, and in a recent letter from the man who sold them he stated he had just shipped twenty-five head of similar two-year-old heifers to a man in Montana at \$80 per head, which would be at least ten cents per pound as his heifers are simply wintered and are pretty thin this time of year.

Parcel Post Practical Only for Short Distances

By C. M. Atwood

THE parcel post is something for the farmer to rejoice over. For once we are ahead of our brothers in the city. They must go to the post-office or a postal station to mail their packages, while we can do it through our rural carrier, with only a step to the road. This has enabled me, here in Vermont, to get individual customers fifty miles away, and ship direct. I can send them a five-pound box of butter for seven-cent cents.

One Experience with the Middleman

Dealings through the commission firms have not always proved a success. At one time I had a few choice pears. After carefully picking and packing them I sent them to Boston. In a short time I received word from the commission man that they did not sell for enough to pay expenses, so that I was in his debt.

Now I have a list of customers who like fresh farm produce and are willing to pay accordingly. I can drop them a line telling them of the articles I have for sale, and when orders are received I send all articles under ten pounds by parcel post. Over that, I find express cheaper; I can send ten pounds of maple sugar to Chicago for thirty-five cents. If I sent the same by parcel post it would cost me seventy-nine cents.

Uncle Sam as My Messenger

Another way I have used the parcel post is in the saving of the farm team and the time of a man. Needing some extra provisions for dinner, I telephoned my meat man for four pounds of beefsteak to be sent out by parcel post. The meat was delivered to me by eleven o'clock, with a charge of only fourteen cents.

I have come to the conclusion that the parcel post is only of benefit to farmers for small shipments and short distances. For long distances, especially on large packages, express rates are cheaper. But altogether, facilities for shipping are now much better than before we had parcel post.



The FARMERS' LOBBY.

The Inventor and the Patent Game

By Judson C. Welliver

Inventing is about the most useful and the least profitable business on earth. But the fact remains that people go right on inventing things, and it is one of the best things about human nature, that the inventor can't be discouraged by the uncertainty of his reward.

He just naturally knows that his idea, even if it's only a new suspender-buckle, is going to revolutionize industry and make him a fortune. Commonly, he plugs away at it till he loses all the money he has, then he wakes up some day to discover some other chap making the profits on his idea and the work of the best years of his life.

EVERY once in a while you stumble upon something that everybody is agreed about, that is true. To be sure it is the exception. One of the things that is true despite a general agreement about it, is that the Americans are the most ingenious and inventive people on earth.

A year or more ago there was a vast deal of comment on the fact that the one millionth patent had been issued by this Government. In itself that didn't mean much. Since that time the number of patents has mounted up to about 1,050,000; and despite that some folks think almost everything that could possibly be devised has been covered by letters patent, the fact remains that we are going right ahead just as if the field were free.

A Patent Lawyer's Opinion

THE proof about American leadership in patents is the figures. At the time when 990,000 patents had been issued in this country France had issued only 440,000; Great Britain, 425,000; Germany, 228,000; Belgium, 237,000; Canada, 133,000. To put it another way, at the time when a million patents had been issued in the United States all the rest of the world had issued only about twice as many.

There is not a more interesting division of the government establishment in Washington than the Patent Office; nor one in which a layman can get more promptly or hopelessly muddled. FARM AND FIRESIDE's family includes a good many inventors, as is proved by the suggestions of ingenious devices that are constantly appearing in the paper. A number of these have lately asked for information and advice about getting patents, and this letter is written with the purpose of answering some of their questions. I asked a patent lawyer of long experience and unusual candor what he thought about patents in general, and he told me this story:

"One time a man with an invention brought it to me to get it patented. I looked it up and advised him not to do it. It would cost him \$60 to start his proceeding, and nobody could say how much to finish it; and the device would be worth nothing anyhow; it was in a field already occupied; some of the things ahead of him were better than his; they had capital and organized business facilities back of them. I told him all about it and urged him not to waste his money. He was immovable. At length I took his money and got the patent pushed up to the point of actual issue; then I begged him once more not to take it out. But he insisted, paid the fee and took it.

"He was seedy, hard up and out at the elbows. I felt criminal, but forgot it. Three years afterward I was in his town, and he came down to see me, driving to my hotel in a huge auto. He looked ready money all over.

"You're the man that started me on the road to fortune," he said. "I came to thank you."

"I gasped and asked him to explain."

"Well," he said, "you recollect that patent you got for me?"

"Yes," I said, "I remember it very well."

"And how you told me it was perfectly worthless?"

"I remember that too."

"Well," he went on, "you convinced me that it was worthless; but you didn't convince me that I didn't want it. I took it out, sold it to a man in Illinois for \$3,000, and with the money bought a drug-store. The drug-store prospered, and I became a wholesaler. Then I set up in the patent-medicine business, and now I'm worth half a million dollars. My friend, you

made my fortune, and I'm here to thank you for what you've done for me."

"What became of the fellow who paid you the \$3,000 for the patent?" I finally managed to ask.

"Oh," he replied, "he was the sucker. You thought I was, but you were wrong."

"Now," continued the patent expert, "that story represents the commonest and most effective way of making money out of patents. It may be knocking my own game, but it's the truth."

I have watched the romance and the tragedy of the Patent Office for a number of years,—and the place is full of both,—with the result that I fully concur in this advice. Don't take very seriously any advice that your device has a fortune in it. Don't believe any fairy stories about inventions that the world is crying for. The world may be crying for them; but if you were a patent expert, and would go through the Patent Office files understandingly, you would learn that there are probably hundreds of patents outstanding, that are designed to cover the same thing you have thought out. If you looked into them you would find that for one reason or another they had not been successful. Here my patent lawyer friend illustrated again.

"See that umbrella in the corner? I paid eighty-five cents for it. It's a very imperfect affair; turns inside out in a stiff breeze. It will strike you in an instant that the invention of an umbrella that wouldn't do that would be a mine. Yet that invention has been produced time and again; it merely happens that in commercial practice it isn't a success. If it works, it costs so much that people can't afford it; if it doesn't work, it isn't worth while. The old-fashioned umbrella that turns inside out, at eighty-five cents, is simply the best you can do, considering price, practicability and commercial experience."

"Here's another very alluring field for invention. Everybody knows that in combustion most of the potential heat units go to waste. The smoke is all waste. They'll tell you that story in a way that will make you imagine you know just what to do to revolutionize all the fuel-burning apparatus, confer a vast benefit on the world, save half the country's fuel-bill, and incidentally make yourself as rich as Rockefeller. Nothing is easier than to write alluring prospectuses for inventions the world needs."

"But if you will look into it you will find that about fifty thousand claims have been filed for devices to do that very trick. Thousands of patents have been taken out. Nobody is going to solve that question except a scientist who is also a skilled mechanic and engineer. It means years of experimentation, costly apparatus, untiring patience and big expenditure. Maybe it will be solved some day. But the casual inventor who rushes into the field with his idea hasn't a ghost of a chance. It would be wicked to advise him to waste time and money on his idea. That's the story of the whole invention field."

Big Business and the Inventor

INVENTION, like almost everything nowadays, is getting syndicated. Great corporations conduct their own laboratories, hiring experts to work all the time on problems of the business. Suppose a twist in women's fashions brings a new color into vogue. It's very expensive to produce with known dyes. But there's a huge demand for it, and it must be cheapened. What happens? In laboratories in half a dozen countries experts in the manufacture of dyes and fabrics will be turned loose on that proposition. They have every facility, know everything already accomplished, and are backed by big money. They go about the business scientifically, knowingly. The chances are a thousand to one in favor of their intelligent efforts producing the desired result before the outsider can do it.

Whether you are thinking of harvesting machinery, adding machines, shoe-making machinery, sewing machines, cash registers, printing presses, elevators, ink, typewriter improvements, submarine navigation, aeroplanes, automobiles or anything else, that statement is true. Invention

is getting to be an organized business. It's as much a part of the business of a great corporation, as the shipping room. The romance has been squeezed out of it, practical business methods have been injected into it. We are getting more inventions all the time, and will keep on getting them; but they're going to be produced mainly in this new and business-like manner.

Suppose, however, that you go ahead and invent something big and worth while; something the world needs, and that nobody else has been able to produce. What then?

That question made the patent lawyer's eyes brighten up. He looked around his room, and his eye fell on the desk-telephone. He picked it up and said to central:

"How soon can you get me 5205 Madison Square, New York? What? Five minutes? Well, don't bother now, thank you."

Turning back to me, he said:

"You remember the little old square box on the wall, that was the only telephone we knew for many years? It was no good for long-distance work. If you wanted to talk out of town, you must go to the central office. This instrument here is equally useful for local or long-distance work."

How Patents are Suppressed

"THIS instrument was for years a crying need of the telephone business. At length it was developed, and the telephone interests bought the patents. They didn't manufacture it, however. They had millions of the old-style instruments already in use. To bring out the new long-distance one would make the whole public demand the best; the old ones would be junk in a day. The new invention, therefore, was suppressed, pigeon-holed, kept from the public. After the patents on the old instrument had expired, so that anybody could use it, then the 'phone interests brought out the new improved device. Not till then."

"That sort of thing is going on all the time, in all departments of business. The public would be astounded if it knew the marvels of improvement in telephony, telegraphy, in all manner of electrical development, that are ready for use, if only the people in control would not suppress them. But they do. They reason that they have great capital invested in the old devices, that would be scrapped if the new were brought out. Why not wear out the old ones first? That's what they do."

The extent to which this is constantly done is almost beyond belief. Our American patent laws are bad in this regard. In many countries, the protection which a patent guarantees is withdrawn if the device is not produced and marketed within a certain reasonable time. Our laws do not look after the public's interest in this way, and so the suppression of inventions is possible. Patent monopoly is aided through this weakness of the law. While the theory of the law is that a patent's protection shall expire at the end of seventeen years, yet in practice it is extended indefinitely by holding back devices for improvement, and bringing them out when they will bring the whole apparatus under the patent on the improvement.

Nowadays, there is an increasing body of opinion that the theory of the patent laws is all wrong. Students of the subject are insisting that the inventor, or his assigns, ought to be given no monopoly in a patent. They would reverse it and provide that the moment a patent is granted it shall be available for use by anybody that wants it. But—and here comes the protection to the inventor—anybody wishing to use it would be required to get a license from the patent authorities, and under that agreement he would have to pay royalties, fixed by these same patent authorities, which should go to the inventor.

This plan has always appealed to me as the logical one. Patent monopoly would be impossible; likewise the suppression of patents. The inventor would be assured, at least, of a good deal better chance than he now enjoys, of getting some substan-

This new plan of making the Government a sort of trustee for the inventor, to safeguard his rights, and at the same time to assure that inventions shall not be monopolized or suppressed, has been put into effect with some modifications in Canada, and I am assured is very successful. In all probability it will one day be the rule of the rest of the world.

In most foreign countries of the first commercial importance, they now have laws which require that patents issued to aliens shall be null if the patented invention is not produced in the country within some specified time; some countries name one year, some two.

tial returns on his invention, because the Government would represent him in the matter. As matters stand now, a poor inventor, producing something that a great corporation wants to use, will find that his device has been stolen from him. If he sues for infringement, he will be dragged through interminable litigation. The corporation can stand it; he can't. While the litigation goes on, the corporation is making profits out of the device; the inventor is getting nothing. In the end the inventor will usually be starved into settling on some exceedingly modest basis and selling his claims to the rich infringer.

If, after looking into all these and a good many other aspects of the patent gamble, you persist in wanting to patent something, go and hire a good registered patent lawyer. Don't hire one who advertises that he has "unusual facilities" for getting action. He hasn't anything of the sort, and if he claims to have he is probably willing to mislead you as to other things than that.

Besides paying the lawyer, you must pay, in advance, \$15 on filing your application for a patent; \$20 more when an original patent is issued to you. It is perfectly useless to try to do this business for yourself. By addressing the Commissioner of Patents, Washington, you can get blank forms for applications, etc.; but it takes a patent expert to write your application so that it will mean what you want it to mean, no more and no less. You must very specifically explain what you are producing, and exactly what is the new thing on which you want your patent. If you claim too much for your invention, your patent on it is nullified, but by filing an amended claim you may get a reissue, provided your mistake was made without purpose to deceive.

The patent must be issued to the actual inventor. If the inventor has had financial backing in developing it, the patent will nevertheless be issued to them as joint patentees; but the inventor appears as the inventor. You may take your invention abroad and patent it in other countries before you patent it at home; and this is done very often, for various reasons which relate to the laws of foreign countries. But if, after patenting abroad, you delay more than a year to apply here, you lose your rights.

Patent Literature is Largely a Bait

ABOVE all, don't be misled by patent literature that tells about things that are needed and leads you right up to the point where, with half an eye, you can see just what the knack is that will perfect something and give you a useful invention. That sort of literature is of the "come on" sort, and its purpose is to play you for a sucker. Don't bite. Don't get the notion that you know more about it than a good, honest patent lawyer. Maybe you do, but most inventors don't. There is no known method of wasting money that is surer than following up an invention and fighting everybody and everything that discourages you.

Finally, if you have a good thing don't be discouraged by anything you read here or anywhere else. Investigate, calmly and sanely, and if good, sound, sincere advice backs you up, go ahead. You may make a billion.

And remember that in some cases it's possible to patent an infinitesimally little thing and make a huge success of it. The difference between the telephone that would work, and the telephone that preceded it but refused to work, was represented by the turning of one screw one eighth of the way around! It was patentable, too, and has made fortunes.



Across the Road

By Annie Hamilton Donnell

Author of "Rebecca Mary," "A Very Small Person," etc.

I COULD stand all but her everlastin' white dress!" Hester Hill's tired and hot face was unbearably frowned. She thumped rather than ironed the little blanket on her board.

"I could stand the rockin'-chair, everlastin'ly rockin', an' I could stand her bein' cool when I'm hot, an' all rested up when here I am ready to drop—but, I declare, that nice starched white dress!"

Hester's own dress was a motley of faded colors and limply discouraged in its droop about her plump young body. She could never remember to have worn white since her wedding-day, and that dress had long since served as "best" baby gowns.

The kitchen seethed with the heat of ironing-day and was savorily a-reek with Christopher's Irish stew—that stew must be ready at stroke o' noon, June or no June, ironin' or no ironin'. Christopher had never eaten a light lunch in his big, hearty existence. Hester was ready, at this moment of wear-and-tear of overtaxed nerves, to swear that Mother Hill gave him Irish stew in his nursing-bottle, strained perhaps, but good and oniony and strong.

"My grief, an' all I want is a cup o' cold tea for my dinner! Beats all how different people are! There's Timothee woke up—what kind of a nap's that!" She hurriedly returned her iron to the stove and answered the imperative little call. Timothee was alluring and lovely just across from the Island of Naps, but his heavy little body weighted down Hester's arms, and his untimely waking fretted her—how was she to iron and get dinner and do a dozen and one other things with this youngster awake!

"Much you care how wore out Mother is!" she scolded. "I suppose likely you've made up your mind to cut another tooth an' that's why you can't take a Christian length o' nap—my babies always do cut their teeth right in the heart o' summer. There, there, nobody shall scold Mother's boy, no they shan't! Mother won't let 'em!" In a little spurt of remorse she was covering his grievous little face with kisses. Tucked into his high chair, Timothee was given a crust of bread to cut the offending tooth upon, and once more Hester Hill took up her iron. By now it was half-past eleven. She would just smooth out Chrissie's school dress and hurry over Kibbe's blouse and then set the dinner-table—two five minutes from thirty minutes left twenty.

Out of the window, across the little width of yard and the dusty summer road, the New Neighbor rocked on her shaded porch and made a maddening cool, white spot on Hester's fevered retinas. She would not look—and looked.

"Her hired girl'll be out with her dinner first you know, same as yesterday. My grief—hired girl!" In the little township of Old Town there were no maids, but "help" and hired girls. "She'll bring it out on a waiter with a nice white coverin'—something cool an' easy to eat. An' there she'll set an' eat it an' rock an' wear her white dress. An' her neighbors—look at her neighbors!" Helpless wrath seized one of them, while the other, in his high chair, mumblingly cut his tooth. To Hester Hill that "view" from her window was all but undurable; suddenly she saw it red.

At noon came Christopher and a riot of hungry children from play. The small hot house rocked with life. Hester flew about frantically, supplying imperative needs. She had no time for even her own cup of cold tea. Her harried nerves set her soul on edge. Christopher was moist and red and ate clumsily—she noticed all those things with a keenness of torture, and she saw how thin his hair was growing on top of his head and how he needed shaving. Christopher wasn't handsome, no use pretendin'. An' the children—Chrissie's apron, clean in the morning, was a sight! Look at Kibbe's

worst come to worst! That'd fix it!" He was already well on his way back to the field. Hester stared after him stonily. She wished too late that she had asked him not to go out that door an' make a picture of himself to the New Neighbor on her porch. It was not a picture of even lights and shades: the New Neighbor rocking and wearing her white dress and Christopher in his lanky jeans.

"She'll know he ain't got much of anything but overalls on. He don't look as if he knew what a necktie was!" Hester's hand went up to her own bare throat, to her tumbled hair, her moist, hot face. She looked no better than Christopher; they were a pair, she and he. She was suddenly defiantly glad Christopher had gone out that door. Let the New Neighbor look! Hester rose to her feet and went to the door and stood there to be seen. This was the wife of the man who had just gone out of that door and loped around the house to his field. Good chance to see—let anybody look!

It was Hester Hill's thirty-sixth birthday. Queer how it should just occur to her then, standing there in the doorway to be looked at! She and Christopher had been married on another birthday of hers more than a dozen years behind them. Thirteen years behind—exactly thirteen. She had forgotten, and Christopher had forgotten. They had only remembered the heat and dinner and work. It would always be, as it had been so long, just dinners and work and heat or cold. And for her, Hester Hill, because she was a woman, it would be worry and wear, wear and worry, until she wore and worried out. She might as well be sixty-six this minute!

The noon work and the ironing lasted into the afternoon, and then there was the afternoon work; just time to mend Christopher's coat and Timothee's little inherited embroidered petticoat descended in a straight line from the first little Hill, and perhaps, by extra diligence, the stocking the Middle Son wore through so continuously with his poor little brace. She would be in great luck if she could get all that done before time to set the table for supper. Of course she might mend out on the porch where it was cooler—

"But I won't," Hester said aloud, her soft lips set in unbecoming lines. "Not with that White Woman watchin'! She'd crow; needn't tell me! I won't have her pityin' me for my old dresses an' darnin' an' Christopher an' the children an' not a minute o' my own. It's bad enough to pity myself!"

Timothee, established on the cool grass within watch of his mother, pulled up blissful fistfuls of grass and rolled about joyously. His shrill little self-communings carried clearly to the New Neighbor across the narrow road; Timothee himself would fain have paid a neighborly visit but for his long, hampering skirts. A man may not pick up his skirts and toddle across the street to pay his respects to a lady with any appearance of dignity. Timothee had his pride.

"She'll see his stockin's are home-made—he will wave his little legs so!" sighed the mother of Timothee. "An' it's no manner o' use tryin' to keep shoes on 'em. But I don't care, I'm not goin' to keep Timothee in the house too."

Her thoughts hurried with her nimble fingers, keeping up with them. Since she had bethought herself that this was her birthday, a certain resentment had crept naggingly into her head. Why could not Kit have remembered, even if she hadn't? He never had any trouble remembering what days his sitting hens came off, nor Grange days, nor how old all his cows were. Was a time when he'd have remembered her day, especially as she was born and married, both, on it. Married to him!

The heat and the wear of continual rush since day-break were as fertilizing aids to Hester Hill's resentments. She mended on stolidly, but now she could have

elbow, clear through the patch! There never were such children to go right through their clothes, or else dirty 'em all up.

"Kibbe Hill, stop eatin' so fast! Chrissie, you'll have your milk over next minute!"

It was only the little Middle Son, the one between Kibbe and Timothee, that Hester Hill's frayed nerves found no fault with. It was that little Middle Son she waited on unscoldingly and uncritically. She was never for a moment forgetful of the pitiful iron brace on the lean little leg of Middle Son; though now she could not see it with bodily vision, it was photographed with remorseless clearness on her heart.

Christopher Hill scraped back his chair noisily. Fed and a little rested, life took on once more at least the quality of endurance. His point of view with respect to life was always healthily resigned. Christopher could be poor and yet happy, warm and yet comfortable. Hester, his wife, regarded him with a kind of angry wonder. My grief, didn't Christopher Hill have any nerves to his name!

"Well, Christmas is comin'! It'll be cool enough then," remarked this nerveless creature cheerfully, as he lifted his uncomely length from the chair. "We could tear off the calendar up to December, if

wept with self-pity. She longed intensely for so many forbidden luxuries; for leisure and a white dress and a hired girl, a husband who remembered and whose hair was not growing thin on top of his head, a shaved and dressed-up husband who would still be Christopher. She longed to buy little soft new stockings for Timothee instead of cutting down her own for him, she longed with all her soul for a straight and unbraced little leg for Middle Son.

It was dusk when Christopher Hill came up for the last time that night from his fields and found Hester on the little front porch. At supper he had scarcely seen her, but he saw her now and drew in his breath in a little whistle of surprise. Hester was dressed in white! He could hear the gentle creak of her rocking-chair and could make out no little bundle of Timothee in her arms. None of the children were in sight—Hester, a white Hester, rocking alone! Then by some strange weaving of thought Christopher remembered. He realized what day it was. All the buried tenderness of the man leaped into life.

"Hessie," he called, "Hessie—oh, you wait, you wait! I got to shave an' get a collar on, then I'm comin' there an' kiss you! It's to-day, Hessie; you remember what that is? You wait; I'm comin' out there!"

"Why—why, Kit!" She could get no farther than that in the sudden sweep of emotion at the tone of Christopher's dear voice. It changed the world for Hester Hill. Love and that tone—they went hand in hand. Love and remembering—and this cool, dim end o' day. And Christopher going in to shave, and the collar and folding one's hands a minute—it was a happy world. Hester sat and rocked and waited, a white Hester, thrilling with life.

"Here I am. Rub that, will you!" presenting in the dimness a smooth cheek and smooth chin. Christopher laughed in her ear. He took her up bodily into his huge, dear arms.

"Feels pretty fine in her white togs, but somebody feel o' my best coat!"

"Oh, Kit, sh! She might hear; it's my white petticoat on over! I haven't got a white dress to my name. I waited till too dark to see the difference. And I got all the children to bed and brought the parlor rocker out, just to sit here an' be as good as anybody. Look at her over there an' me over here, an' see if we aren't alike."

"I don't see anybody but you over here. Hessie, little girl, it's our birthday! Let's go to walk down the road the way we use to ten years ago."

"Thirteen, Kit."

"Thirteen, then; you take my arm an' walk up snug." "Christopher Hill, we use to take hold o' hands! Much you remember!"

"I remember we use to kiss each other in all the dark places. It's dark's a pocket under Higgins's elms, Hess; come along."

They might have been boy and girl, swinging hands, loitering down the dim road. The white petticoat glinted nervily in the spots of house-lights they passed into and out of on their way. It was a petticoat without shame. Hester had forgotten it; she had forgotten the worry and work and that the bread might not rise, the ironing wasn't done, the children's shoes were wearing out. That she had ever been discouraged or envious was not to be believed. Kit's hair wasn't growing thin! He didn't need shaving. She put up her hand to feel of his chin and cheeks and caressed their smoothness.

"Feelin' round for another kiss?" he gibed tenderly.

"Yes," she cried brazenly. "I felt a lot, Kit! It's pretty dark right here, isn't it?"

"Dark's a pocket," mumbled Kit, glorying in this new and most astonishing mood of theirs. When had they been young and lovely before? When had they done anything but mend and cook and farm—eat and sleep and bear children? And here at their hand all the time—just for the taking—was life, sweet and tender and rejuvenating! A sense of hurry came over the man; there was so much lost time to make up.

They fell by and by in pleasant, prosy talk about "prospects." Odd how what was past and gone slid behind them as indifferent matter for converse to-night—what was now and to come mattered, only that. And odd, too, how prospects brightened. There were going to be good crops—potatoes, corn, apples. The hay was heavy this year—fine! Hester's chickens were growing like weeds. Her berries would be plentiful. The children—they had begun with the children and here they were again!

"Kit, say that again about Luther." Luther was Middle Son. "About his little leg."

"It's straightenin', I tell you. He don't limp so much, you know he don't."

"Yes, I know!" she cried eagerly. "I—I think I know, Kit." But it was hope rather than knowledge. "Only I watch him so constant. If somebody'd noticed that warn't always watchin'—"

"Well then, Si Higgins, will he do? Si's noticed. He said only just a day or so ago how our Luther was improvin'."

"How'd he say it, Kit? Can't you remember how?"

"That boy o' yours ain't goin' to limp much longer—that's how. Si's a noticin' fellow. 'He'll be good as new before you know it,' Si says. What you got to say to that, now?"

"Oh, Kit—as good as new! He was so straight and perfect when he was new—" She broke into a soft sobbing. "But it won't be 'before I know it!' she sobbed.

It was not a long walk down the quiet road, for there were the children at home to go back to. And especially there was Timothee. They hurried a little going back. The New Neighbor was still on her porch, rocking in her white dress. They had to pass close to her, but they refused to unclasp hands; they even continued to swing them unashamed. Hester carried her head high in a sort of pride of joy. She no longer envied. An unexpected, an extraordinary, attitude of mind possessed her, she didn't care a snap for the New Neighbor across the street! Let her see the white petticoat go masquerading by as a dress! There was no room in Hester Hill's soul at this moment for petty vanities—not with Kit swinging her hand and love in the world.

"Sit down out here while I slip in and look at Timothee. We won't go to bed yet a while, will we? I'm havin' such a good time, Kit!" But it was already over. She came panting back in a panic. Timothee wasn't there—not there!

[CONCLUDED ON PAGE 21]



Our Young Folks' Page

Conducted by Cousin Sally



DEAR COUSINS—The month of May is the time for a number of things. It's the time when all the fathers and big brothers are busiest with the last of the spring planting, and the mothers are rushing around, trying to get the meals ready and all the extra housework finished, and it's the time for all my little cousins to start clubs. There is so much fun for boys and girls this time of year, and there is so much they can learn, besides the splendid chance to earn money; and if a lot of boys and girls get together they can do all these things so much better than one alone.

If you want to start a pleasure club plan it so that you can give someone else pleasure as well as yourselves. The club could have a picnic once a week, and each time some poor little boy or girl, who is not so fortunate as you, could be asked along, to share the joyous day and the goodies of the lunch-basket. Of course my little cousins would treat the visitor just as well as they know how, in that way learning little lessons of courtesy, besides having the happiness of making another happy.

If the club is for study, there is no better subject than butterflies. You can catch them, study their colorings and a lot of other interesting things. Last fall a yellow butterfly flew into the room of a friend of mine and stayed there. She wanted to feed it, but did not know what. She tried honey and flowers, but the butterfly would not touch them. Then she

tried water sweetened with sugar, "for," she thought, "every living creature wants a drink." The butterfly took a drink of it, and did so once a month all winter, and when the spring came it flew out into the bright sunshine.

The members of a club formed to earn money would have no end of opportunities, for there is no place like the country for that. There are chickens and the garden patch upon which you can grow things to sell, there are the berries and ever so many things. Three of my little cousins formed themselves into a money-earning club last year, and each morning they went a-berrying, coming home about noon with heaping baskets of juicy fruit. These they took to the village, and each day each of those boys was seventy-five cents richer.

A club of girls could gather flowers, put them in pretty bunches, and let the boys sell them in the village. The boys might take orders for wild flowers to be delivered when their customers wanted to decorate the table or house for company, and the boys and girls could pick them together, bringing them in fresh with dew on the day they were needed.

So you see, there are a lot of things you can do, for fun, for study, for wealth. Form your club, and write to me about it; or if you do not know how to form it write to me, and I will tell you. I want to know what all my little cousins are doing.

Lovingly,

COUSIN SALLY.

The New Little Red Riding Hood

By Arnot Chester

CHILDREN, what would you think of being killed and eaten up by a wild beast in the very heart of New York City? This almost happened to a little girl named Dolly Root, not many years ago!

Dolly's father had a friend who was a sea-captain, and on one of his trips he brought home with him a wee little tiger cub. This tiny tiger baby was as playful as a kitten, and it was such a pretty, graceful little creature that the captain gave it to Mr. Root as a pet for his little girls, Milly and Dolly. The children were delighted with their new playfellow, and they cuddled it and romped with it just as if it had been a really, truly kitty.

When it first came the cub was scarcely two months old, and so good and gentle that nobody dreamed of being afraid of it any more than of a pet dog or cat. But as it began to get older, Empress, as the little girls named it, would sometimes grow cross and restive, and at last Mr. Root decided it might be better to send the cub to a Zoo where it couldn't do any harm to anyone. But he didn't really think there was any danger, so Empress was still allowed to run about the house like a tame cat.

On a certain bright afternoon in early spring Mrs. Root took Milly out for a walk. Little Dolly begged hard to go too, but she was just getting over a bad cold, so her mother was afraid to take her along for, although the sun shone brightly, the wind was high and cold.

"No, dear, not this time," Mrs. Root said, giving Dolly a kiss, "by next Saturday you will be quite well again, I hope, and then we will all go together. Now let

cheerful, and waved her hand with a smile to Mother and Milly, when they looked up at the window a minute afterward from the street.

For a half-hour or so all was quiet in the house. Then, suddenly, a terrified scream rang out, and throwing down his paper Mr. Root sprang to his feet and, without waiting even to snatch up a stick, rushed into the kitchen, for he recognized Dolly's voice, and he remembered that she and Empress were in there alone together. As he entered the room he saw that he was not one moment too soon. In a corner poor little Dolly sat screaming in terror, and in front of her crouched the cat, snarling ferociously, her tail swishing and her lips drawn back from her cruel teeth. She seemed in the very act of springing upon trembling, helpless little Dolly. Mr. Root ran forward and kicked the cub in the head with all his strength. The blow sent it over, and as it fell he shouted to Dolly to run. Like a flash the cat was on its feet again, now thoroughly enraged and lashing its tail in fury. Again and again Mr. Root knocked the beast over, and he was beginning to wonder how much longer he would be able to defend himself in this way, when his eye fell on the gas-range, and a happy thought struck him. Throwing the oven-door wide open, he boldly snatched up the struggling, snarling cub, in spite of its



Mother see what a brave, good girl her little Dolly can be! Daddy is at home you know, so you won't be left alone in the house. Have a nice game in the kitchen with Empress, and when you get tired of playing go into the dining-room where Father is reading, and amuse yourself quietly with your new story-book until we get back."

Dolly was very, very disappointed, for she did dearly love going for a walk with Mother. But she tried her best to look

clawing and beating at his hands so savagely that he could have cried out with the pain, and thrust it bodily into the oven. Then he slammed to the door, and holding the knob firmly with one hand, turned on the gas full blast with the other. The furious beast inside made a frantic effort to escape, but Mr. Root held the door, and the sounds grew less and less, and by and by stopped altogether. But not until Mr. Root was perfectly sure the gas had suffocated the cub did he let go his hold upon the door, and comfort little Dolly with the assurance that her savage playfellow could never hurt her again!



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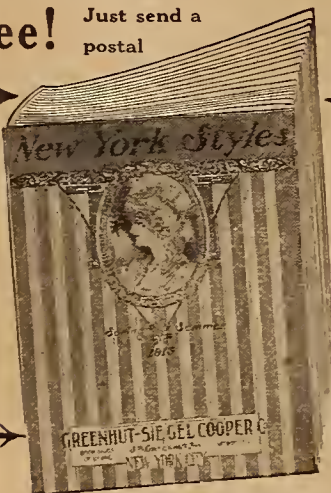
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Reading for Sunday's Quiet Hour

Joseph, Ruler of Egypt

By the Rev. Chas. O. Bemis

Sunday-school lesson for May 11th: Gen. 41, 25-40. Read Gen. 41.
Golden Text: God giveth grace to the humble.—1 Pet. 5, 5.

The Bible, especially in the Old Testament and the four Gospels, is a rural-life book. Let us interpret it accordingly. We believe that the Bible is a true record of facts.

JOSEPH was no quitter. He didn't sulk around under acute disappointment, but refreshed his courage and took new hold upon God when the king's ungrateful cup-bearer refused to intercede for him. He did his work in the prison just as willingly and efficiently as he had done before his master, Captain Potipher. If you want satisfaction in life do your cheerful best under all employers and circumstances. Only so can you be prepared for a better place. The shirker around the farm is the one who never has any "luck." He never "gets a chance"! The reliable worker is the lucky man. If a handy man carefully sets his fence-posts in a straight line, well tamped, all men in the region want him to build their fences. Anyone can set two posts in a line, but it takes care to line up three. After faithfully filling his high position in the dreary prison for two more long years, the Lord in whom Joseph trusted opened the way to deliverance and the greatest opportunity. Pharaoh dreamed that double dream wherein the seven lean weebegone cattle ate up the seven fat ones, and the seven blasted heads of wheat devoured the seven large plump ones. Pharaoh was deeply worried. He knew the dreams meant something extraordinary, but just what he couldn't imagine. He hastily called all his wise men, interpreters of dreams, magicians, astrologers, but they were all dumbfounded and couldn't even think of the first clue to the mystery.

Then the ungrateful cup-bearer saw his chance to further elevate himself into the king's favor, and so told him about the marvelous ability of Joseph as an interpreter of dreams. Pharaoh rushed messengers to the prison to bring Joseph back. To the king's question as to his ability to interpret dreams, Joseph manfully told him that his ability was not his own, but was of God, and that God would give the

answer. How could Joseph know before he was told the dream that he could interpret it? Bold faith in God, that! He knew God would tell him. The king rehearsed his double dream, and inspiration informed Joseph that the two dreams had one meaning, that seven years of unsurpassed crop production would be followed by seven years of unheard-of crop failures and famine. Then Joseph clearly outlined a practical plan to the king whereby provision could be made for the seven-year famine.

The plan deeply impressed Pharaoh with its sensible wisdom and, declaring that there was none better fitted in the kingdom to carry out the plan than the God-inspired one who outlined it, immediately appointed Joseph to be absolute ruler, under him, of all Egypt. The inauguration was hurriedly prepared. The king gave Joseph his own signet ring as the emblem of authority, put the gold chain signifying high position around his neck, arrayed him in the richest robes, arranged a tremendous public procession of priests, soldiers and officers, had Joseph ride in the chariot behind his own and commanded the people to bow down to himself and Joseph as the rulers of Egypt.

Joseph Meets His Brethren

Sunday-school lesson for May 18th: Gen. 42, 3-17. Read Gen. 42.

Golden Text: Whatsoever a man soweth, that shall he also reap.—Gal. 6, 7.

JOSEPH laid his plans carefully and worked his big scheme to complete success. Lots of men can dream and give good advice, but only a worker can execute his dreams into living accomplishment. The regular government tax was one tenth of the people's income, and Joseph only doubled the tax during the extra good years, so that the extra tithe did not bear heavily on the people, who had more for themselves than usual anyhow. Besides, he must have urged the people to save up for their families during the prosperous years. But most of them did not save much, and none enough. A great crime is that so few able-bodied young men save enough to get a good start before getting married, and then fail to save enough to live comfortably in old age. This is a

spendthrift era. So when the famine years arrived the people soon came in large numbers to Joseph to buy food, until they were entirely dependent upon his foresight.

The inscriptions on one of the Egyptian monuments tell of a long-continued famine of seven years when the Nile River did not overflow its banks. The time was the same in which Joseph ruled. Thus do the hieroglyphic inscriptions of those ancient times stand to-day as parallel proofs of the truth of the Scriptural statements. But the famine was in all lands, and after the grain was gone in Canaan, Jacob sent his ten sons down to Egypt after a supply, but, for fear of some evil befalling him, he kept at home Benjamin, his youngest and only son alive, as he supposed, of his favorite wife, Rachel.

The ten, with their caravan safely arrived, came into the presence of Joseph, who personally attended to the sale of grain to the many foreigners from different lands. They bowed themselves to the ground and failed to recognize their brother Joseph, although he knew them and spoke through an interpreter to conceal his identity. Joseph, remembering his youthful dreams of twenty years ago, sternly accused his brethren of being spies, but they stoutly maintained their innocence and told him of their father and family—that there were twelve sons, one dead and the youngest at home. Joseph yearned to see his own brother Benjamin, and so plotted to have him brought down to Egypt also. He insisted that the ten were spies, but to prove them proposed to keep one of them as a hostage while the others went back home with their grain and then returned with Benjamin.

The brethren were in a sorry plight, and talked among themselves, admitting that this trouble was brought upon them because of their heartless disposal of Joseph many years ago. Reuben said, "Yes, I told you so at the time." Joseph could stand it no longer, and went out and wept, but came back and had Simeon bound as the hostage, sending the rest away with their money secretly placed by his orders in each sack of grain. Joseph's triumph was at hand. Was he really great enough to be magnanimous? It's a hard test for anyone.

Bag with Crochet—By Gertrude McAllister

THE bag illustrated is most unusual and attractive. It is made of natural-colored linen for the two side sections, and lavender silk for the lining of the bag. A straight strip of the lining silk is shirred around the side pieces, to form a puffing behind the crochet. The top edges of the linen and silk are buttonholed together with lavender twist, and the bag is entirely completed before starting the crochet, which is done with the thread known as carpet or cotton warp and a steel crochet-hook no larger than necessary to carry the thread. Work the crochet as follows:

Chain seventeen, catch in the fifth chain from the needle for a picot, chain eight and catch for a picot, chain two, catch in the sixth stitch made in the chain with which the work was started. Chain seven and catch for a picot, chain eight and catch for a picot, chain two, catch in the first chain made in the work.

Second Row—Turn, chain seven and catch for a picot, chain eight and catch for a picot, chain two, catch in first loop of preceding row, before the first picot. Again make a loop with two picots, and catch in the center of first loop of preceding row, between the picots. Make another loop with two picots, and catch between the picots of next loop of preceding row.

Continue in this way, always catching twice in the first loop of the row and once in the other loops, until there are ten loops in the row, or the row is wide enough to fit over the silk puffing. After that work in loops as usual, but catch only in the center of the first loop, as well as in the others. Work in this way until sixty rows of the full width are made, then omit one loop at the end of each row until two loops remain. Fasten off.

The three roses for the lace are worked separately. Begin with five chain stitches, and join in a ring.

First Round—Chain five (to count as one double crochet and two chain), one double crochet in the first chain of ring, *chain two, one double crochet in next chain of ring, and repeat from * until one double crochet has been made in each stitch of ring; chain two, catch in the third stitch of the starting chain of the round. There will be six spaces in all,



of the edge lie flat upon the linen, and work picot loops around the top scallops.

For the drawing-strings of the bag two chains are made, and a case for them is provided, as follows: Begin at the right-hand edge of the second wide row from the top at one end of the lace, and catch the crochet thread there. Chain five, catch in loop of row above, chain five, catch in next loop below, and zigzag in this manner across the lace, then zigzag across the linen in the same way, to the second wide row at the other end of the lace. Work across end of lace and second side of linen, to starting-point. Join and fasten off. Beneath these zigzag chains the drawing-strings are run, the ends of each string joined, to form round. Each string should be just large enough to fit around bag when stretched to its fullest capacity.

For the handle make a long chain with the carpet warp, then, with a No. 3 bone hook, crochet a chain of the chain just made, giving the thick braided effect for the handle. The latter should be about ten inches long. Fasten off at the end.

Around one end of the handle now pick up five single crochet, working them so the right side of the crochet is toward the end of the handle.

Second Round—Two single crochet in each stitch of preceding round, picked up on the double thread.

Third Round—Two single crochet in first stitch, one single crochet in next, and repeat all around.

Fourth Round—Two single crochet in first stitch, one single crochet each in the next two stitches, and repeat to end of round. There will be twenty stitches in the round, with the right side of the crochet in. Make five rounds of one single crochet in each stitch, stuff the ball with cotton, then make three rounds, narrowing one stitch five times in each round. Pick up a loop in each of the stitches that remain and draw the thread through all of them. Chain fifty, drop the loop from the needle, and pass chain and thread beneath one of the drawing-strings, at the center of the lace at one side. Catch to ball where chain was begun, then make one single crochet in each stitch of the chain, again passing beneath the drawing-string. Catch to ball, and fasten off. Make a ball and a loop at the other end of the handle.

Across the Road

[CONTINUED FROM PAGE 18]

"His little bed's untucked an' empty. Kit! I laughed at first, for I thought he'd tumbled out an' rolled under it, same way he has before an' slept right along, but he isn't under! Kit, do you hear? I tell you I can't find Timothee!"

They searched the room together—all the rooms. Blank terror clutched at them because of this thing that could not possibly happen and had happened. The children, wakened and plied with frantic questions, shook with fright in their little beds. Their shrill cryings added to the awfulness of the moment.

"No one could possibly carry off my baby. Kit, Kit, someone has carried him off! While we were so happy an' foolish—" The mother's anguished face broke Christopher Hill's big heart. In his misery of pity for her he lost sight of his own distress. Poor Hessie—poor *chid*! Oddly enough to his slower mind occurred the relieving thought. That woman across the street that had been settin' there right along—

"Hessie, you listen. I've thought of somethin' we can do to begin with: you go across an' see if that woman saw any strangers hangin' round here while we's away. She'd a-seen; she couldn't helped it. Go—go! I'll hush up the children an' hunt everywhere again." But it would be merely filling up the harrowing moments of waiting; they had already looked "again."

Hester Hill sped away on wings; her feet had no consciousness of touching ground from her own porch to that of the New Neighbor. She was sobbing as she flew.

The New Neighbor received her in the lighted doorway, her hands spread out with a curious effect of barring the way. She was smiling faintly until she saw Hester's face.

"Oh, you are frightened! I never thought of its doing that. Oh, you poor thing!"

"Have you seen—somebody has stolen my baby—Timothee!" Hester gasped.

"I know—I did it. I mean I didn't steal him, but I have him in here. He came half way and you were gone and he looked so sweet and it was just borrowing—" the words hurrying on each other's heels. "He's just as safe as he can be. He crept out on your porch in his little yellow nightgown, and I thought he was going to roll down the steps. My heart was in my mouth. I never ran so fast. No, please not quite yet! Don't go in yet! I tell you he's fast asleep, the safest baby you ever saw!" The New Neighbor was the sobbing woman now. She kept the little fence across the doorway. Hester Hill drew back with sudden insight into this stranger's wild little mood. Hurrying to the edge of the porch, she sent a clear, assuring call across the road to Christopher.

"Kit! Kit! he's over here all safe! It's all right. I'll bring him home. You tell the children to go to sleep again faster'n Jack Robinson." Then she whirled again to that barred door that separated her from Timothee.

"He's in my bed," the stranger breathed unsteadily. "I never had a little baby in my bed before. He looks so sweet. He laughed when I rocked him and sang to him. I never rocked or sang before. Oh, I thought I could keep him a little while in my bed, just a little while! You have him so much, and I didn't stop to think you would be frightened. I didn't think you'd find out he wasn't there, and by and by I should have carried him back to you, when I'd kissed him a few more times and made believe he belonged to me. Woman dear, no little creature ever belonged to me, and so many belong to you! I've sat on my piazza all day to-day and envied you. And to-night when you and your husband went by—I and mine did that once, but we can never do it again."

Hester with her baby in her arms, going back to Kit, remembered the sad, wet eyes the New Neighbor had lifted to her, and the memory sent her straight to Kit.

"Take hold of me! Don't let go!" she sobbed. "Hold me an' Timothee both! Kit, I envied that woman this mornin' an' this afternoon, but to-night—Kit, she had Timothee in her bed, an' he looked so sweet! Think of her havin' to give Timothee up in his nightgown! He's perfectly beautiful then—look, will you! Oh, my goodness, my goodness, an' this mornin' an' this afternoon I envied her!"

Her white dress, her ease, her "hired girl"—they had seemed things for envy, luxurious things to bite your thoughts on savagely.

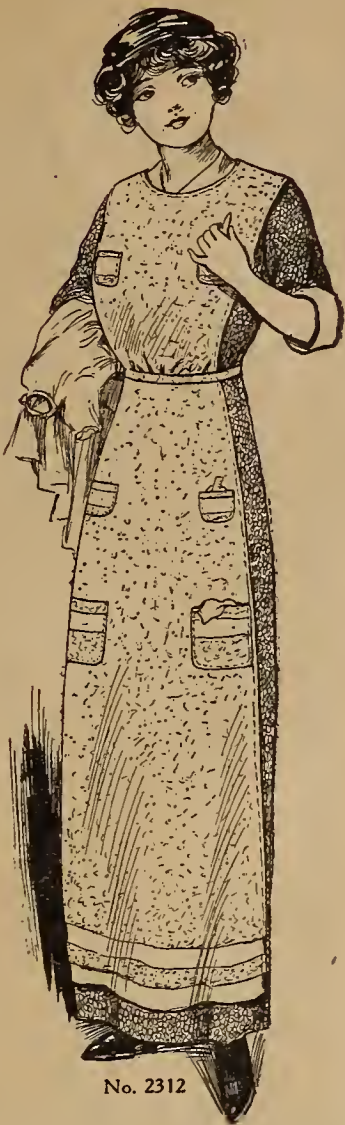
"An' me with all I got!" Hester cried. With Timothee and the children and Kit and that lovely little walk, hands swinging, down the road. The other woman's sad, wet eyes looked into her shamed soul reproachfully.

"Oh, I'm glad the ironin' isn't finished an' the bread ain't baked!" thought Hester, "I'm glad there's so much to do! I couldn't rest if I didn't get tired, an' here I'm so rested to-night! Kit—" she caught his brown, big hand and rubbed it against her cheek—"Kit, to-morrow do you know what? I'm goin' to cook up something nice an' take over to that poor woman. I pity her."

The Two Prize-Winning Designs

And Some Patterns Which Our Readers Requested

Selected by Grace Margaret Gould



No. 2312

THE bath-apron shown in the above illustration was submitted by Mrs. H. G. Graham, Bowling Green, Kentucky, who received the second prize in the cash prize contest for the best and second best suggestion for the fashion page. The apron is extremely practical and one that every mother who has a baby to take care of will want to use at baby's bath time.

No. 2312—Bath-Apron with Pockets

One size. Material required, two bath-towels, or one and seven-eighths yards of twenty-seven-inch material. Price of pattern, ten cents

Shown on this page is an attractive separate coat suitable for wash and wool materials, an apron which entirely covers the dress, a comfortable wrapper and a smart but simple dress for the elderly woman. All of the clothes were requested by our readers and are therefore shown for their benefit. Woman's Home Companion patterns may be ordered from: Pattern Department, Farm and Fireside, 381 Fourth Avenue, New York; Pattern Department, Farm and Fireside, Springfield, Ohio; Pattern Department, Farm and Fireside, 1554 California St., Denver, Colorado. The catalogue is 4 cents



The above illustration shows the apron pattern No. 2312 laid flat. The apron is made of two Turkish bath-towels and may be quickly put together and at small cost



No. 2313
No. 2314

THE first prize in the cash prize contest for the best and second best suggestions for the fashion page went to Miss Pearl Weaver of Fultonham, Ohio, who sent in the design for the dress illustrated above. An especially desirable feature of this dress is that it is suitable for many occasions and may be developed in a variety of materials both woolen and wash.

No. 2313—Waist with Vest: Long or Short Sleeves

32 to 44 bust. Material for 36-inch bust, one and seven-eighths yards of thirty-six-inch material, or one and three-eighths yards of forty-six-inch material, with one-half yard of all-over lace or embroidery twenty inches wide for trimming. The price of this pattern is ten cents

No. 2314—Four-Gored Skirt: Plaits at Sides

Material for 24-inch waist, three and seven-eighths yards of thirty-six-inch material, or three and one-fourth yards of forty-six-inch material, with one-half yard of all-over lace twenty inches wide for inset. Width of skirt at bottom in 24-inch waist, two and three-fourths yards. Price of this pattern is ten cents



No. 2180

No. 2289
No. 2290

No. 2180—Tucked Wrapper: Two Styles

32 to 44 inch bust. Material for 36-inch bust, seven and three-fourths yards of thirty-six-inch material, with three fourths of a yard of contrasting material. Price of this pattern is ten cents

No. 2289—Tucked Waist, Including Sleeveless Guimpe

32 to 44 bust. Material for 36-inch bust, one and three-fourths yards of thirty-six-inch material, with five eighths of a yard of thirty-six-inch embroidery for trimming and seven eighths of a yard of net for guimpe. The price of this pattern is ten cents

No. 2290—Skirt with Plaits at Back

22 to 34 waist. Material for 26-inch waist, four and one-eighth yards of thirty-six-inch material. Width of skirt at bottom in medium size, two and one-half yards. Price of this pattern is ten cents



No. 2281—Top-Coat with Notched Collar

32, 36, 40 and 44 bust. Material required for 36-inch bust, three and one-eighth yards of fifty-four-inch material, with five eighths of a yard of contrasting material for trimming. Price of pattern, ten cents



No. 2281



No. 2180



No. 1798



No. 2313
No. 2314



No. 2289
No. 2290



No. 1798—Housework Apron: High or Low Neck

32 to 44 bust. Quantity of material required for medium size, or 36-inch bust, seven yards of twenty-seven-inch material, or five yards of thirty-six-inch material. The price of this apron pattern is ten cents

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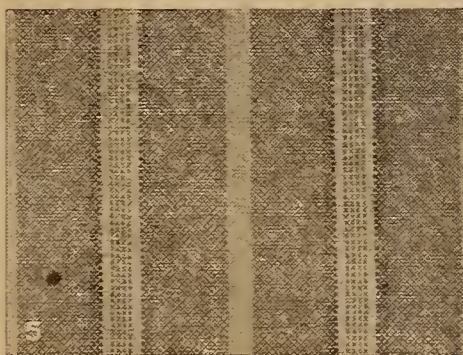
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Now that crepe weaves are so much the vogue, every woman is sure to be interested in the very inexpensive crepe chiffon pictured above. It costs but seventeen cents a yard and comes in the daintiest of floral patterns and frequently with a narrow black stripe to give it a touch of smartness

Crepolis, a sample of which is illustrated in picture No. 2, is one of the new cottons this year which has a touch of quaintness in its design. Though it costs but twenty-five cents a yard, it is quite effective enough to be used for one's best summer afternoon or evening dress

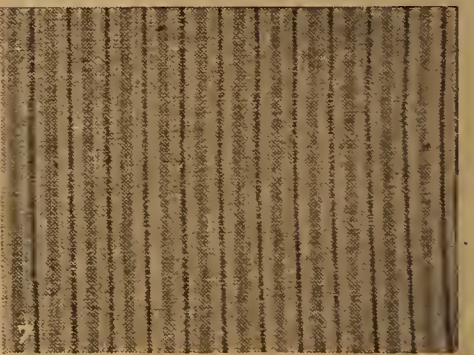
Something new and something different in the way of a fabric, cool and comfortable for a kimono, is called krinkolette. A sample of it in a dainty soft shade of pink is shown above. It comes in a great variety of pretty floral designs and colors, and it sells for fifteen cents a yard



For a one-piece dress or suit the new cotton serge in black-and-white combinations is most desirable. It sells for twenty-five cents a yard. A rival of outing flannel is the new eden cloth, No. 5, which is an especially good fabric for shirt-waists and house-gowns. It costs fifteen cents a yard and comes in many colors



The prettiest of colors are shown in the new zephyrs, a sample of which is pictured in No. 6. These inexpensive cottons show many variations of plain and fancy stripes. The fact that they launder so well and hold their colors so perfectly make them desirable for housework dresses and children's play-dresses



Many of the new cottons simulate the silks in design. One dainty fabric is called cotton taffeta and is pictured in illustration No. 7. It costs twenty-five cents a yard. Another material which also sells for twenty-five cents is crepe voile, No. 8, where the wide stripes are in a soft pink tone against a white ground



A very serviceable cotton is called tweedette. It copies the woolen fabric tweed and comes in dark color combinations. Its price is twenty-five cents a yard. It would be an excellent material for a light-weight coat suit or dress. It comes in two-toned effects and also in very good-looking serviceable mixtures

The flowered mulls were never prettier than this year, and they can be bought from fifteen cents a yard up. The sample shown in No. 10 has a very attractive morning-glory design in pink against a white ground. It would make a charming afternoon dress with a girldle matching the flowered design in color

The ratine fabrics are among the leaders this season. Cotton ratine is shown in an endless variety of color combinations and is not only suitable for one-piece dresses and coat suits, but is much used as a trimming. The ratine pictured in illustration No. 11 is in a gray-blue-and-white combination that is very smart

The Housewife's Club

EDITOR'S NOTE—Monthly we give prizes of \$2.00 for the two best descriptions (with rough sketch) of original home-made household conveniences or labor-saving devices, and \$1.00 for the third best or any that can be used. We also give 25 cents each for helpful kitchen hints and suggestions, also good tested recipes that can be used. We would suggest that you do not send more than two recipes, and not more than five kitchen hints each month, because we receive so many that space will not allow us to print them all, in spite of the fact that they are reliable and practical. All copy must be in by the tenth day of the month and must be written in ink, on one side of the paper. Manuscripts should contain not more than 250 words. We would suggest that contributors retain duplicate copy, as no manuscripts will be returned. The mail is so heavy that it is impossible for us to acknowledge receipt of manuscripts. Address "The Housewife's Club," care of Farm and Fireside, Springfield, Ohio.

HANDLE Attachment for Scrubbing-Brush—To lighten a hard task, put a handle on the scrubbing-brush. Make a socket of light metal, having the latter two and one-half inches smaller all around than the top of the brush. On both sides of the metal, one third in from one end, make a crosswise cut, so that the shorter section can be turned around into a socket for the handle. Turn the socket up, and fasten the flat part of the metal to the scrubbing-brush with screws. To add strength, put an extra piece of iron around ferrule part, and fasten to the brush top. Insert an old broom-handle in the ferrule, and fasten with screws. Scrubbing can be done in a standing position by this device, instead of stooping. The brush is also good for side walls and ceilings.



Mrs. G. P. E., New York.

How to Mend Sacks—The best and quickest way to mend a sack is to cut a patch larger than the hole it is to cover; then make a thick paste of flour and water, paste patch on and press with a hot iron. Place patch on wrong side of sack, or it will push off when sack is filled.

Mrs. G. P. E., New York.

Use of Eggshells—During the spring and summer months save the eggshells. Put them into a flour-sack, and save them for the hens next winter. You will find them beneficial.

J. H. K., Ohio.

Suit-Hanger—Every woman knows how hard it is to hang up a skirt so that it retains its original shape. Here is one way in which it can be done.

Take an ordinary wooden coat-hanger, and screw underneath the hanger (as shown in illustration) two small brass



hooks about one-inch long. Place them at either side of the center hook, at equal distances from it. Hang the loops of the skirt on the hooks. A jacket can be slipped on the hanger without wrinkling the skirt.

L. D., Indiana.

To Brighten Lamps—Oil-lamps throw off a dull light sometimes, and an apparent change and brilliancy is noticed if a lump of camphor is put in; or if no lump camphor is handy a few drops of vinegar will brighten the light.

When kindlings are scarce, try a teaspoonful of granulated sugar to start the coal (especially soft coal) fire; it helps wonderfully.

Mrs. J. E. R., Ohio.



A Home-Made Dress Form—Those who make their own dresses will find this form easy to make, a great help and much cheaper than any they can buy.

Take new heavy muslin, a good-fitting princess pattern, and cut to fit very tight to below the hips. Trim arm's-eye and neck to fit and sew up firmly. Fit pieces into armhole and neck, also one to the lower part of form. Sew only part of way in and stuff tightly with hay, straw or anything convenient. Sew up and mount on pedestal made the proper height for your skirt measure.

Mrs. C. J. L., Indiana.

Handy Cake-Box—Take a tight box, and remove one side. Make a board which fits exactly on inside. Turn your cake out on it with a greased paper under it, and after icing it put the box over it; then you have your cake put away without moving it. Cover the box with paper, or fix in any way to match your kitchen. Put a ring or handle on top to lift lid.

Mrs. H. H. C., Colorado.

A Strong Cement is made by melting common alum in an iron spoon over hot coals. It will even join glass and metal together, or hold glass lamps to their stands or stop up cracks about their bases, as kerosene does not penetrate it.

Mrs. G. P. E., New York.

A Pretty Clothes-Hamper—A useful and ornamental receptacle for soiled linen may be made in the following manner: Procure one of the deep slat baskets in which bananas are shipped and which the grocer consigns to the rubbish-heap, and the lid of a cheese-hoop to do service as a cover. First line your basket with ordinary white skirt-lining or cheese-cloth, allowing an inch and a half at the top to extend over the edge and be brought down on the outside. Now select a piece of silkoline or cotton challis in some pretty shade with a tasty design, and measure your lengths of the goods by the depth of the basket, allowing enough to turn in at top and bottom. Use as many widths of the goods as will make a piece corresponding in width to twice the circumference of top of basket. After joining the widths and turning down an inch at top and bottom, make a double shirring at top and bottom as well as one to correspond with each of the hoops on the basket. The goods having been secured to the basket at bottom and top by means



of short tacks, neatly conceal each of the shirrings with a strip of furniture-braid held in place with brass tacks. The lid may be covered with goods or painted, as preferred, and a door-bumper may be screwed in middle of top for convenience in lifting. A hamper thus made will be found both useful and attractive.

Mrs. A. R. L., Indiana.

A Perfumed Moth-Destroyer—Take one ounce each of cloves, cedar and rhubarb, pulverize, and sprinkle in the chest or drawer. It will create a fragrant, spicy scent and prevent moths.

A. A. C., New York.

Dustless Dusting-Cloth—Take two old stocking-tops, and split each one, then sew together, making a square cloth. Soak this in kerosene and hang out to dry. When dry, you have an excellent duster.

Miss B. G., Michigan.

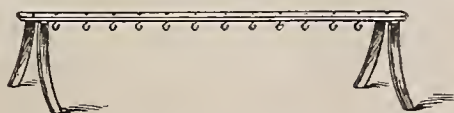
Take a Box about a foot or sixteen inches longer than baby's short clothes and about two feet wide, stand it on end, and screw eight little cup-hooks, same as used in a cupboard, up in the top end of the box. Next, take eight little smooth pieces of board one-half inch wide and ten inches long, wrap with a piece of muslin, and tie with a piece of tape in the center, leaving a loop. Now take a little dress, fasten top button, slip the little stick into each sleeve, draw loop up through neck, hang onto the little hook, and the dress will not be mussed a bit. Diapers and shirts can be folded in bottom of box, and a curtain made for front, and baby has a wardrobe all of his own. This costs about twenty-five cents, and is a big help, as everything can be kept together. The outside of box may be papered to match room, and on top may be kept the basket with toilet articles.

Mrs. J. C., Nebraska.

Dye Made from Tea-Grounds—A good slate dye is easily made by saving up your tea-grounds for a few days. Boil in an iron pot, and set with coppers. Boil your goods in it after straining off the tea-leaves. Hang the cloth on a line to drip and dry. This is a very simple and cheap way to get a permanent slate color.

A. A. C., New York.

Shoe-Rack for Closet—Make two triangles of slats for standards, the sides about fifteen inches long. Nail one triangle to either end of a cleat, and screw little cup-hooks into the cleat. Shoes may be hung on the hooks by the top button.



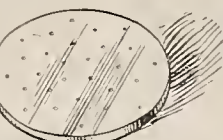
holes or eyelets, and so saved from considerable rubbing. It also helps them to retain their shape. Instead of a stand, a cleat may be nailed to the closet wall or door, eighteen inches above the floor.

Mrs. E. S., Wisconsin.

A Floor Pad of newspapers piled two inches high or so will be the delight of the busy ironer. One side should be covered with floor-linen, the other with carpet—the linen for summer and the carpet for winter. It is an unbelievable relief for tired feet.

Mrs. J. J. O'C., District of Columbia.

A False Kettle-Bottom—Take a pail-cover or a shallow tin of a suitable size to fit your kettle. With a nail and a hammer punch holes in it so the water can have free play through it. Placed in the bottom of a kettle in which meat is to be boiled, it prevents burning.



C. L., Michigan.

Common Solder can be made to stick to tin, brass or iron by an application of concentrated lye and water made rather strong. Apply with a sliver of wood to the part to be soldered.

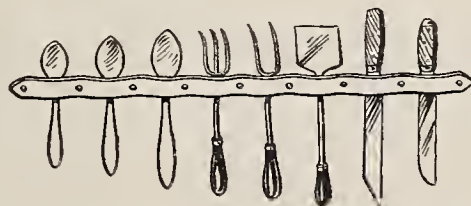
Mrs. J. E. B., Indiana.

If Your Lamp-Wicks do not burn evenly, try rounding the corners. Then push in toward middle of wick from each side. If done properly, the light will be quite even.

For a rusty stove-funnel, get a little linseed-oil, and go over it while warm. It will look as black as can be, won't wear off for some time and won't burn off unless the funnel gets afire.

E. M. B., Maine.

Rack for Small Kitchen Utensils—Take a strip of leather an inch wide and as long as you wish. Tack it up near your cooking-table, and put the tacks in at regular intervals down its length. Hold it full enough so a spoon or knife will slip easily into the openings.



This little kitchen help will save a lot of worry. Just a glance, and you will know where each spoon or knife is, without looking in the knife-drawer.

Mrs. R. L. B., North Carolina.

To Wash Dishes Without Wiping—Wash the dishes, and pile them in a dish-pan or milk-pail, then pour a goodly amount of hot water over them. Take them out and pile loosely, upside down in a dish-drainer. Lacking a wire drainer, a folded towel in an empty peach-crate or a box of suitable size serves the purpose. If well rinsed, they will dry quickly and be clean and shining.

Mrs. M. V. O., Minnesota.

Dusting Mop—Take old stockings, and cut them in inch-wide strips, leaving a little of the feet uncut, with which to fasten the mop to handle.

Mrs. C. P. H., Ohio.

Keeping a Half Melon Fresh—If only half a melon is used, keep the other half fresh and in good condition by covering it with paraffin paper laid on so as to exclude the air from the cut surface. Grape-fruit and other fruits and vegetables may be kept for a short time in the same way.

A. JAY.

Five Good Kitchen Hints—To cover scratches on furniture and at the same time to collect all dust, rub with a soft cloth which has been well moistened with the following mixture: Equal parts of cider vinegar, turpentine and linseed-oil. Put the three in a bottle, shake well, and it is ready for use. It may be kept for any length of time. This is fine to use on varnished floors; it keeps them glossy and preserves the varnish.

To make carpets or matting look brighter, when sweeping sprinkle them with corn-meal moistened with kerosene. To clean brass, pour ammonia on it, and scrub with a brush. Rinse in cold water, and polish with a soft dry cloth.

A teaspoonful of castor-oil poured on the soil at the roots of a dying palm or asparagus fern will make it grow like magic.

The bottom cellar-step painted white saves a tumble. Mrs. E. G., Wisconsin.



Farmer Oxteam—"Well—I don't know as I hold with these new-fangled ideas about modern machinery and such. Old ways are good enough for me!"

Anty Drudge—"Yes! And look at your poor, overworked wife! I s'pose old ways are good enough for her, too! But from now on there's one new way she's going to know about—and that's the time-saving, easy Fels-Naptha Soap way."

Women can't afford to be behind the times, any more than the farmer who wants to be successful can afford to be without modern machinery.

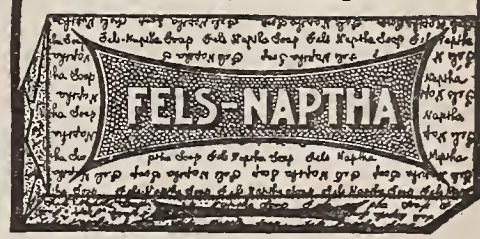
Fels-Naptha Soap is the greatest labor-saver of the present day. It does its work with no fuss and bother, in cool or lukewarm water, and doesn't take all a woman's strength to help it get rid of the dirt.

It washes clothes quickly and easily, dissolves grease, and makes stains disappear.

Use Fels-Naptha Soap for everything about the home.

Follow the directions on the Red and Green Wrapper.

Fels & Co., Philadelphia.



Save \$5 to \$23

Factory Prices—Freight Paid—One Year's Trial

Gold Coin Stoves and Ranges

Buy direct from factory and get a better stove for less money. Freight prepaid—stove comes all polished, ready to set up. Use it one year—if you aren't satisfied we refund your money.

Write for Catalog and Prices. Big Free Catalog shows why improved features of Gold Coin Stoves make them fuel-savers and splendid bakers—why they have given satisfaction for 53 years.

Gold Coin Stove Co., 8 Oak St., Troy, N.Y.

**The Best
Beverage
under the
Sun—**

Drink
Coca-Cola



A welcome addition to any party—
any time—any place.
Sparkling with life and wholesomeness.

**Delicious
Refreshing
Thirst-Quenching**

Demand the Genuine—
Refuse Substitutes.

At
Soda
Fountains
or Carbonated
in Bottles.

THE COCA-COLA COMPANY, ATLANTA, GA.
Whenever you see an Arrow think of Coca-Cola.



YOUR Kind of Advertising Will be Boosted at Baltimore

You may not think that you are much of an advertiser—but you are—nothing is sold without advertising of some kind. Do you want to learn what is being done in your line of advertising—trade paper, technical paper, direct-by-mail advertising—whatever method of publicity you use? Do you want to hear addresses from the men who have made the big American successes in advertising and merchandising of all kinds? Do you want to meet 10,000 live, progressive, thinking men—buyers of advertising—the men who are responsible for the industrial progress and supremacy of the United States? If so, go to the ninth

Annual Convention of the Associated Advertising Clubs

of America. This great Convention will be held in Baltimore, June 8th to 13th. Open meetings, held every day, will be full of inspiration, education, and information on every branch of merchandising. Delegates from 135 American and Canadian clubs will be present, as well as delegations from Great Britain, Germany and other foreign countries. Baltimore will

more than sustain her enviable reputation for bountiful hospitality in a series of splendid evening entertainments of wide variety and delightful possibilities.

You will be welcome whether you are a member of an advertising club or not. Make up your mind now to go; write to the address below for information as to the program, hotel accommodations, etc.

Associated Advertising Clubs of America
Convention Bureau

1 North Calvert Street

Baltimore, Md.

Six Pies That are Good

By Mabel H. Wharton



HE ingredients for making the following pies will be found in most every pantry, and the newness of the dessert will give added zest to even a monotonous menu.

Buttermilk Pie—For two pies separate the whites from the yolks of three eggs. Beat the yolks thoroughly with one-half cupful of sugar and two tablespoonfuls of flour. Now add two tablespoonfuls of melted butter and two cupfuls of fresh buttermilk. Flavor with extract of lemon, and pour into pans lined with pastry. The whites are well beaten and sweetened and spread over the pies after baking. Place in the oven until they become a delicate brown.

Vinegar Pie—One cupful of sugar, one cupful of boiling water, five teaspoonfuls of vinegar and two of lemon extract, two level tablespoonfuls of corn-starch and two eggs. Mix sugar, corn-starch, vinegar and flavoring, and slowly add the hot water, stirring constantly on the stove until it thickens. When the mixture is cold stir in the yolks of the two eggs, and pour into pan lined with pastry. Make a meringue of the beaten and well-sweetened whites. Spread over the top after baking, and brown.

Carrot Pie—Carrots make a very nice pie if used in just the same way as pumpkin. Peel them, and after cooking mash through a sieve. Use one cupful of carrot, one of milk, one-half cupful of sugar, two tablespoonfuls of flour, a little salt, one-half teaspoonful of cinnamon and cloves mixed and one egg. This mixture makes one pie.

Green-Tomato Pie—Peel and slice the tomatoes, pour boiling water over them, and let stand for a few minutes. Line a pan with rich pastry, and fill with the tomatoes, one cupful of sugar, a little lemon-juice or vinegar, one teaspoonful of flour, one-half cupful of water and a sprinkling of cinnamon. Cover with crust, and bake.

Chocolate Pie—Line a deep pan with rich pie-crust, and bake in a quick oven. Grate one-half cupful of chocolate, place in a saucepan with one cupful of hot water, butter the size of an egg, one tablespoonful of vanilla, one cupful of sugar, the beaten yolks of two eggs and two tablespoonfuls of corn-starch (dissolved in as much water). Mix well, and cook until thick, stirring constantly. Pour into the pie-shell. Make a meringue of the two egg-whites beaten stiff with two tablespoonfuls of powdered sugar. Spread over the pie, and slightly brown in the oven.

Caramel Pie—Make a rich crust, and bake it. Then make a custard of one and one-half cupfuls of brown sugar, two tablespoonfuls of flour, one egg, one lump of butter the size of a walnut, and one pint of boiling water. Mix, and cook as for lemon pie. Remove from stove, and stir in one teaspoonful of vanilla extract. Pour into the pastry-shell. This quantity is sufficient for one pie.

Pie Hints

By Elizabeth M. Spies

TO PREVENT fruit juices from escaping from pie, mix sugar and flour together dry, allowing one heaping tablespoonful of flour to the required measure. Sprinkle bottom of crust generously, put in fruit and the rest of the sugar, wet edge of crust, trim, and turn up a ridge around edge, so that if a little juice should happen to bubble out through vent-holes in top it will not run over. The left-over pastry could be baked. Perforate with a fork to prevent it bulging up in the middle. These pie-shells should always occupy a place on the emergency shelf, so that when company comes unexpectedly it will take only a few minutes' time to cook a delicious cream or lemon filling without trouble or flurry.

Two Spring Salads

By Mary Eleanor Kramer

Pea-and-Water-Cress Salad—Wash the cress well, and place on ice till thoroughly chilled. Chop six small crisp radishes; cut four hard-boiled eggs into dice, and to this mixture add a cupful of cold boiled peas. Pour over the mixture a large cupful of mayonnaise dressing, and mix thoroughly. Arrange in dish, then chop the chilled cress and sprinkle thickly over all. Over all sprinkle one tablespoonful of capers.

Orange Salad—An appetizing spring relish is sliced oranges on lettuce served with mayonnaise dressing.



Something Good Coming

The woman who must prepare good things to eat for a family of hungry people likes the easy Jell-O way for making desserts.

Jell-O doesn't have to be cooked or sweetened or flavored, for the manufacturers do all these things themselves, and a Jell-O dessert can be made in a minute.

There are seven different flavors and they are all delicious. As "something good to eat," not only at dinner time, but for luncheon or supper,

JELL-O

takes a place in the home that has never been filled before.

Combinations of fruit with Jell-O furnish dainties, delicious and beautiful, so quickly that they seem to be the work of the fairies.

We have two Recipe Books, printed beautifully in colors. One is "The Six Cooks," and the other "Desserts of the World." Either of these books will be sent free to all who write and ask us for it.

All grocers and general storekeepers sell Jell-O, 10 cents a package.

Seven flavors: Strawberry, Raspberry, Lemon, Orange, Cherry, Peach, Chocolate.

If you cannot get Jell-O where you trade, send us 10 cents (coin or stamps) and we will mail you a package of any flavor.

THE GENESEE PURE FOOD CO.,
Le Roy, N. Y., and Bridgeburg, Can.

The name JELL-O is on every package in big red letters. If it isn't there, it isn't JELL-O.

Ladies' World Club

THE LADIES' WORLD is one of the best woman's publications at any price. A single copy of this splendid journal would be a treat at the price that we offer you an entire year's subscription in connection with FARM AND FIRESIDE. We are more than pleased to offer you such a bargain. Every reader who takes advantage of this offer is bound to agree with us on this point.

Farm and Fireside, 1 year,	Both for only 60 cents
regular price 50c	
The Ladies' World, 1 year,	
regular price 50c	
FARM AND FIRESIDE, Springfield, Ohio	

GOLD DUST

**makes dish water
that digs**

Gold Dust offers the shortest cut from the drudgery of dish washing. Just a little Gold Dust shaken in your dish water will remove the grease and dirt.

Gold Dust digs deep into cracks and corners—purifies and drives out every bit of dirt or hidden germs which soap and water will *not* reach. Gold Dust sterilizes as well as cleans.

If you spend two hours a day washing dishes, Gold Dust will enable you to save one hour—and your dishes, too, will be spotlessly clean, wholesome and sanitary.

Gold Dust is sold in 5c size and large packages. The large package means greater economy



"Let the GOLD DUST TWINS do your work!"

FARM AND FIRESIDE

EVERY OTHER WEEK THE NATIONAL FARM PAPER

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MAY 23 1913

U.S. Department of Agriculture

ESTABLISHED 1877

SATURDAY, MAY 24, 1913



"Sweet spring, full of sweet days and roses"—George Herbert

THE EDITOR'S BULLETIN OF BETTER THINGS COMING

Cover Design

Our next will be a "Swat-the-Fly" number both in cover and partially in contents. That infantile paralysis may be carried by flies is now admitted, and the slogan on the cover of the June 7th issue is therefore a particular appeal to fathers and mothers.

Special Articles

The time of the year is at hand when schools and colleges give to the world a new grist of trained or educated young men and women. "Do the agricultural colleges give the young people back to their parents on the farm?" is a question that must be answered by "No!" An article on this subject in the next issue gives the reason.

Another feature you will enjoy will be about the milch goat, the rival of the cow for supplying small families with milk.

The Headwork Shop

Many letters we receive begin with this sentiment: "I turn to the Headwork Shop first as soon as I get my paper." But it isn't good enough yet. Think of a million readers and then of only a dozen or a score perhaps of good Headwork "kinks" in an issue. Let's have your very best latest labor-saving device. Remember, the writer receives \$1.00 for every one used, and \$2.00 if it receives first prize; and don't be discouraged if your first contribution is not a prize-winner. Those not suitable for the Headwork may be accepted for other departments at regular rates.

Crops and Soils

You will be interested in some of these subjects: "Success with Green Liquid Manure," "Commercial Fertilizer on Corn," "Testing the Sorghums," "An Acre's Possibilities," "The Corn-Root Aphid"—all to appear in early issues. "Peanut Culture in Oklahoma" tells how the Spanish peanut is helping farmers in the Southwest to get along without corn.

Garden and Orchard

How to make a light-weight and easy-running wheel hand-cultivator is one of the interesting helps in store for FARM AND FIRESIDE gardeners. Practical illustrated articles on inexpensive pole-and-string trellises will be appropriate in the June issues.

Farm Notes

"Whitewash Worth While" will tell you how to make whitewash that won't rub off. Among the various mechanical devices for saving your time, money and labor will be "Quick Repair for Buggy Spokes," "Brackets from Wagon Tires" and "Unloading Prickly Pears."

Poultry

"Petroleum for Mites" is a practical mite remedy. "Feeding and Breeding for Two-Ounce Eggs" tells why it pays to have good products to sell, and how you may make use of Nature's laws in order to get good products.

Marketing

More parcel-post letters have lately been received, telling how various products ranging from spring chickens to pie have been successfully and profitably sold by parcel post. These will be printed in the June issues. All readers who have successfully used parcel post for marketing farm products are invited to give their experiences.

Fiction

You will enjoy the story entitled "The Market-Hunters" which will appear in the June 7th issue. It is a delightful tale suggesting to the farmer an excellent and novel plan for the marketing of crops that are frequently unsalable, while the farmer's wife will like it, too, because of the thread of love which runs through it.

Children's Page

A new feature for the children will appear in the coming number. The Whizzles and the Wumps are funny little creatures that do funny things, and we believe that Cousin Sally's boys and girls will watch their antics with a great deal of pleasure.

Fashions and Needlework

Miss Gould will have an unusually good page of patterns that our women readers will want to use at once, and by Miss Holbrook there will be an Irish crochet collar-and-cuff set that is easy to make and suitable for wear with the low-necked dresses of this summer.

Cookery

And don't overlook the recipe page. The mere reading of its recipes on how to cook strawberries will make your mouth water.

WITH THE EDITOR

Democracy in Traveling

Sometimes we travel on railway trains for the mere purpose of getting somewhere. In such a case, the best way is to board the limited train at night, get into a berth in the sleeper and wake up next morning just in time to dress and get off. On such a journey the traveler never gets any benefit from the trip, save just the change of location. He makes no acquaintances. He finds the people who are his fellow travelers mostly reserved and apparently not overjoyed to meet him.

It is the same if his trip is by Pullman car and runs into the day—like the ordinary journey from mid-western points to New York or other eastern points. The folks on the train are very well dressed and not extremely approachable. But if it is a mixed train, and there are day coaches and a smoker forward, the atmosphere is quite different. In the coaches one finds democracy and fellowship. There is a different sort of world. I know of no way in which to observe the strata of American society to better advantage than to change from the Pullman car to the smoker forward.

I find that there is much more to be learned in the day coach or the smoker. The instance I have in mind is not quite in point, because my fellow traveler and I fell into talk when seated in the dining-car—where all classes are leveled by the primal and universal desire for food. But it was on a horribly slow train moving across the State of Iowa, a train made up of all sorts of cars except cattle-cars, I think,—and nobody who could travel by better means was on board. So we chatted quite sociably.

He was a farmer from one of the Idaho irrigation projects. His farm consists of about 180 acres, and he was one of the first settlers. He went to Idaho from Ohio, and is making money.

The "Busting" of the Boom

"Growing many apples?" asked I, remembering the beautiful apple-boom literature I had read advising me to buy a ten-acre orchard and be free from all financial worries as soon as they should come into bearing. "Apples!" said he. "Not for me! Why, I can take you to warehouses in Spokane where you can get all the fine western apples you want for seventy-five cents a box!"

Now this was about April 25, 1913. I give the date so that if any apple man from the Northwest feels aggrieved he can call me down. I hope he will. I hope apples were not as low as that on April 25th at Spokane, but that's what he said, and it will be remembered that FARM AND FIRESIDE has been warning people for two or three years now that the apple boom would sooner or later "bust." My fellow traveler from Idaho seemed to think that it has already "busted." "I have over two thousand apple-trees," said he, "in as good an apple location as there is in the Northwest; and anyone that wants them can have 'em!"

We sympathized with each other for a while. For we have about the same number of apple-trees.

I don't mean to say that apples are sure to be a drug in the market in the future. But I do mean to say that I should feel surer of making a great deal of money on my orchard if so many hundreds of thousands of trees had not been set out in the recent past, and if, as a matter of history, we did not know that after every such spasm of planting apples actually do sell down to the actual cost of production for a number of years. I'm not discussing the matter at all—I'm "just telling you."

Hogs and Horses

"Well," said I after a while, "if apples are N. G. out there, what are you making your money on?" "Hogs," he replied. "Hogs and heavy horses. I have about a dozen big mares—weighing about a ton apiece, you know—and a full-blood stallion. My colts bring me from \$250 to \$350 apiece when they are three years old, in spite of the automobile and the tractor. Alfalfa is our forage crop, and barley our grain. We can grow from forty to seventy-five bushels of barley to the acre, and the land gets better for barley as we break up the alfalfa-sod. I can pasture from eight to twelve hogs to the acre of alfalfa. I put self-feeders in the pasture, and let the hogs have all the barley they will bother to work out of the self-feeders. They balance their own rations up pretty well—so well, in fact, that my hogs last fall averaged 205 pounds in weight at seven and a half months. I call that pretty good results from hogs, barley and alfalfa."

It doesn't take much figuring to prove that a man with 180 acres of Idaho land devoted mainly to swine-growing is doing well. Cholera? He stated that he had never had a case of cholera in his herd, and wasn't afraid of it. "I never heard of half a dozen cases in our part of the country," said he. "A dry climate, outdoor conditions, plenty of forage—the hogs are stronger than the cholera germs."

Some Settlers in Distress

"Do the farmers on the irrigation projects usually succeed, or fail?" I asked. I knew as a matter of fact that on most of the irrigation projects the conditions are bad. My Idaho acquaintance agreed.

"A large proportion of the settlers went on the land with too little money," said he. "They expected returns too soon. The people booming the country sent out reports which were too roseate in color. The government has been too strict with the settlers. A lot of them are in actual distress. Something will have to be done for them. But after they have had time to get the land into alfalfa a man can make a good living on forty acres of land. He can take care of two cows to every acre of alfalfa, and he can pasture hogs enough, finishing them on barley or some other grain crop to make a good living."

Here's a dissertation by a man on the ground. To the thousands of FARM AND FIRESIDE readers who are looking for homes, and to the other thousands who live in the irrigated regions, it will be interesting, I think.

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How Free Shall Trade Be?

THE present tariff turmoil in Congress is a repetition of what has occurred periodically whenever tariff revision has been attempted. In the face of such diversity of interests as prevails how vain a thing it is to expect an adjustment or readjustment of tariff schedules so as to be reasonably equitable. Producer and manufacturer, distributor and consumer cannot all be equally favored.

The voice of the people spoke unmistakably for righting of tariff wrongs last November even though it was generally conceded that the making of a satisfactory-to-all tariff schedule is impossible. But that demand still remains and the administration and Congress will attempt to meet that demand before adjournment of the special session now convened.

It is this recognition of the impossibility of providing an equitable tariff tax that is influencing farmers and industrial workers generally to favor a more radical downward revision of the tariff than has hitherto been sanctioned.

Many now are willing to feel the pinch of injustice from downward revision if by such revision there seems a probability that the "malefactors of great wealth" may also by an income tax aimed at large incomes be made to give up some of the extraordinary gains and as well as the influence in legislation that goes with such gains. According to Congressman Hall of Tennessee, who is credited with having drafted most of the income tax provisions, the income tax, if passed by Congress, would produce \$17,000,000 a year, and it could be adjusted to raise \$150,000,000. The smallest income to be taxed according to Representative Hall's plan is \$4,000.

Is the Auto Tax Constitutional?

AN INCREASING number of automobile-owners and the numerous taxes which motorists are required to pay in some States have resulted in muffled protests against the constitutionality of the auto tax. The question may be carried to the highest court in the land.

It is claimed that the owners of most vehicles are sometimes called upon to pay a registrar's tax, a tax for driving the car and a personal property tax as well. Multiple taxation and the discrimination against one class of road-users are the chief points which form the ground for the attack against the law's constitutionality.

Co-operative Societies Encouraged

THE recent session of the Washington State Legislature passed a law which gives authority for the organization of co-operative societies. The law was designed primarily to encourage societies for the purpose of handling farm products.

Five or more persons may organize. The filing fee is \$25, each stockholder is allowed but one vote and, except in certain cases, no stockholder can hold over one fifth of the stock.

How to Get a Farm Expert

WE HAVE had something to say in the past concerning the work of agricultural experts who are known under the various titles of "county agricultural advisers," "farm demonstration agents," "crop doctors" and similar terms.

There are plenty of ways of securing the services of such men, probably the simplest being, the raising of funds and the direct employment of such a man by the county commissioners.

An added value is, however, gained when the appointee is endorsed by and comes from some prominent agricultural organization such as the state experiment station, or the Department of Agriculture at Washington. A man coming from such sources has at his command a source of information with which he can

supplement his personal knowledge and experience. The county commissioners of Douglas County, Washington, had that idea in mind when they adopted the following resolution:

To the United States Department of Agriculture, Washington, D. C.:

Resolved, That we hereby petition the United States Department of Agriculture, respectfully requesting its co-operation in farm demonstration work in Douglas County, Washington, and requesting the assigning to the community of a competent and suitable agricultural expert. We hereby signify our willingness to appropriate out of the current expense fund of said county our pro rata share of the expenses of this demonstration work in our county, as provided in chapter 18 of house bill 28 of the session laws of 1913.

This formal request is perhaps the most businesslike method of securing expert agricultural assistance from the Government. There is a right and a wrong way of grappling with every problem. The right way is generally to go to headquarters.

Pennsylvania has passed a law prohibiting the sale of egrets and their shipment into or out of the State after July 1, 1914. The passing of this law is a distinct advance in the protection of plumage birds against slaughter for millinery purposes.



MR. LLOYD K. BROWN, whose picture appears here, is the youngest of a farming partnership of four. Two other brothers and a sister complete this combination for team-work. They were all born and brought up in town, their father being a physician. From the first they were scientific in their manner of thought and very early decided to educate themselves for farm life. While still children in the city they were planning farms. As soon as Paul, the eldest, graduated from the agricultural college, they rented a farm near Vermilion, South Dakota, and have been active partners in farming ever since.

Live-stock farming has constantly been made of chief importance in their farming operations combining dairying, sheep-feeding and growing hogs. Lloyd has always had superintendence of the swine department and has become a thoroughly well-known man in his specialty. The same is true of the other members of the partnership.

Pasturing on rape, soy-beans and other legumes plays an important part in the economical production of pork on their farm. Supplementary pasture crops are grown for both hogs and sheep, and the corn and other stubble fields are made to supply pasture crops after the main crops are removed.

The work accomplished by this partnership in farming is full of interest, since it so admirably demonstrates how the scientific knowledge obtained by agricultural education can be applied to the practical solution of farm problems. Mr. Lloyd K. Brown is a regular contributor to FARM AND FIRESIDE, the profitable marketing of hogs being his specialty.

Nitrogen Supply no Longer a Problem

PROFESSOR ELIHU THOMPSON one of our greatest electrical scientists, is convinced that nitrogen, now our most expensive element of commercial plant-food, will be the cheapest of the fertility trinity—nitrogen, phosphorus and potash—in less than a decade. Instead of growing only one or two legumes, as clover and Canada field peas or a like number better suited to southern conditions as practised in a haphazard way in the past, now a dozen legumes are being grown especially adapted to different sectional conditions and varied rotations.

Hardy strains of alfalfa are grown even to the Canadian border and southward to meet the cow-pea, soy-bean, peanut, lespedeza, and other legumes less common. For the great middle section and northward we have the half dozen varieties of clover, including sweet or bokhara clover, vetches and lupines. Each is finding its place as a nitrogen fixing agent and soil renovator. These when used understandingly are providing nitrogen where formerly the soil hungered for it.

But for intensive and special production of crops, nitrogen, instantly available, will be a necessity in the future as now, to push growth rapidly before bacterial life changes organic nitrogen to a form that plants can use. For this supply the atmosphere is now being made by mechanical and chemical processes to give up its nitrogen so abundantly that the prophecy of Professor Thompson seems likely of being realized. We are informed that commercial nitrogen products made from the air are already on the market.

Keep Down the Weeds

THE Nebraska Experiment Station announces through a report by H. J. Young, following a thorough investigation of soil mulches, that much more soil-water is lost through evaporation from the leaf surface of plants than is lost by evaporation from the surface of the soil.

Mr. Young also observes that if a hard layer of soil dries out to the depth of two or three inches it will serve as a mulch even though it is not loosened.

The principal result of the experiment may be summed up in "Keep down the weeds."

Spreading the "Aggy" Germ

ALMOST every important branch of farm husbandry has already felt the stimulus and energizing influence of the special educational farm trains. The general farming information furnished by the earlier trains operated has given place to specialized instruction and demonstration. Orcharding small fruit, vegetables, cotton, tobacco, better seed—each of these farming interests and various others are being helped by educational trains puffing up and down scores of railway lines every year.

Unless the influence of such special trains has been studied at first hand by traveling with these outfits, it is not easy to believe how ambitious farmers and farm youth are getting an incentive for better farming therefrom.

A few state agricultural authorities are now employing automobile demonstration cars to reach the "far rural districts." These are holding meetings at country schoolhouses and on the farms, where farmers, school children, teachers and parents gather and become inoculated or reinfected with the germ of the new agriculture. Here we have a direct educational force that is well calculated to pave the way for the farm vocational instruction that is sure to have a place in all rural schools without much loss of time.

Why not draft the auto trucks into the demonstration service more generally and carry two-ton exhibits to thousands of farm neighborhoods this very summer.

Grass Weeds—Johnson and Bermuda

Good Counsel for Controlling These Pests Which May be Threatening Your Farm

By George F. Freeman, Plant-Breeder

JOHNSON grass is without doubt one of the most serious weed pests with which farmers in many sections must contend. The damage which it has already accomplished and the persistency with which it seems to be spreading is a constant cause of apprehension. Any suggested means of controlling this pest, therefore, finds an eager audience among those whose farms are already damaged or threatened by its invasion. For these reasons I believe that a timely warning



Dig out every root and sprig

should be issued against so-called easy methods of eradicating this pernicious weed.

There is no easy method of destroying Johnson grass and no means of driving it from a field in which it is well established without heavy loss or expense. The worst feature of these theoretically "easy methods" is not that they fail to accomplish the results desired, but that they tend to a laxness on the part of farmers who trust in them. The first few plants which appear are therefore neglected with the thought that when the pest becomes troublesome it can easily be disposed of.

The opportunity to get rid of the Johnson grass at the only time that it can be done inexpensively is thereby lost. The

IN PRESENTING this article we recognize that in some parts of the country the grasses here characterized as weeds are useful crops. The term "weed" is therefore not used in a libelous sense, but rather as referring to a plant that is growing on land that is desired for other agricultural purposes.—The Editor.

old adage that an ounce of prevention is worth a pound of cure, was never more nearly true than in its application to the control of Johnson, Bermuda and quack, or couch, grass.

Johnson grass is a vigorous perennial. It is propagated by strong underground stems as well as by seeds. These subterranean stems are distinguished from ordinary roots by being jointed. They are frequently spoken of as rhizomes. From any joint of one of these, both stems and roots may grow. Such a stem coming to the surface develops for itself an independent crown, which in turn sends up many stems and gives rise to a new bunch of the grass. From this clump as a center, new underground stems are put forth in all directions. In this manner not only is the grass continuously spread, but it also fills the soil with the thick and resistant rhizomes, rendering the complete eradication of the pest exceedingly difficult and expensive.

The reason for this is fully realized when one learns that every joint of a rhizome which may be broken apart by the plow or harrow is capable of sprouting at once or else lying dormant in the soil for several months until favorable conditions arrive and then putting forth roots and branches. Unless, therefore, it has been exposed on the surface and thoroughly dried out, each piece acts as a cutting to further scatter and increase the infestation. New rhizomes are being formed at all times when the grass is in active growth. There is, therefore, no season of the year when it may be safely neglected.

Water May Carry the Seeds

Johnson grass also matures a heavy crop of dark reddish-brown seed. These

are rather smooth and shining on the back, slightly flattened, spindle-shaped, with a rather narrow apex. They are about three times as long as an alfalfa seed. Johnson-grass seeds are readily scattered about in barn-yard manure, in the droppings of stock fed on infested hay and by water from irrigation-ditches.

The first step is to carefully inspect the fields, at least two or three times a year, and dig out, root and branch, every sprig of Johnson grass found. Special attention should be given to the areas lying near ditches, since it is here where the water first begins to spread over the land, that the seeds are for the most part lodged.

If the land is not already infested, the cost of this frequent inspection will be insignificant.

Dig, Mow and Pasture

Where only a few clumps of Johnson grass appear in a field, of alfalfa for instance, it will pay to dig them out by hand and then keep the field clear as above suggested. In some cases, however, the infestation is already beyond control by hand digging. Such fields should be mown frequently so as not to allow any of the Johnson grass to go to seed. With this precaution the land may remain in alfalfa. But if the stand becomes too poor to yield profitable crops withhold all cultivation of such fields, and let them be grazed closely during the early fall and winter. When the hay crop from a field infested with Johnson grass becomes unprofitable it is best to pasture it closely for an entire summer before plowing in the fall. The tramping and close grazing will pack the soil and leave it poorly aerated. This will weaken the root systems of both the alfalfa and Johnson

grass and cause them to be developed near the surface, thus facilitating their destruction. When the ground has been grazed clean by the stock and is rather dry, preferably in the early fall after the summer rains have ceased, it should be plowed deeply and left loose and cloddy. This will insure deep and thorough drying out. Disk the ground at intervals throughout the fall and early winter. At the beginning of the spring season plow again as deeply as possible. Follow by the disk



The first few plants are often neglected

or weeder at intervals to keep down all surface growth until the regular planting season for corn. The corn should be kept perfectly clean by the frequent use of the cultivator and hoe throughout the remainder of the summer. This land may be planted to sugar-beets or to other hoed crops in the early spring. After two or three years of cultivated crops, in which not a sprig of Bermuda, Johnson grass or other noxious weed is allowed to grow, the field is again ready to be planted to alfalfa.

The estimated cost of the procedure as here outlined previous to the planting of the corn would be about six dollars per acre to make the land weed-free.

Milking-Machines in Arizona

Observations on the Practicability and Cost of Machine Milking for a Herd of Thirty-Five Cows

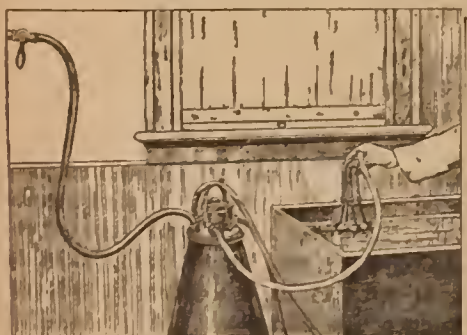
By H. J. Minhinick

HAVING heard and read a great deal about the efficiency and otherwise of milking-machines, the writer eagerly welcomed an opportunity of inspecting the plant of C. W. Davisson of Mesa, Arizona, one of the leading dairymen of the Salt River Valley.

Mr. Davisson's ranch comprises 160 acres of choice land two miles south of the thriving village of Mesa, which is of interest, as being the first Mormon settlement in Arizona, and which is laid out on the model of Salt Lake City, with exceptionally wide streets and blocks a thousand feet long. In this section of the valley one drives for miles over roads which would shame the average city street, and past beautifully kept and splendidly fenced farms where an untidy corner is considered a disgrace.

The Stable is Thoroughly Modern

Mr. Davisson's milking herd comprised at this time thirty-five young Holstein cows, most of them pure-bred. The cattle are kept in a small field and fed a mixed ration consisting principally of alfalfa, to which the greater portion of the ranch is seeded. The milking barn holds seventy head. In front of the stanchions is a cement floor on which the cows stand at milking-time. A cement gutter behind this floor takes care of all manure, and the entire barn is as clean as water and labor can make it. Each



After milking, the tubes are washed first with cold and then with scalding water

stanchion has the occupant's name stenciled above it, and it is most amusing to see how quickly each cow takes her own place and how she resents an intrusion.

The milking plant comprises a two-horsepower gasoline-engine belted to a vacuum pump which is connected to a galvanized tank, and this in turn to two runs of piping with cock and outlet at each milking station—that is, at each two cows. Vacuum gages are installed on each run of pipe, and a valve on the tank opens should the vacuum rise too high, closing again at the proper point: fifteen and one-half inches.

For the benefit of readers unfamiliar with engineering terms it may be explained that normal atmospheric pressure will support a column of mercury approximately thirty inches in height, or a column of water thirty-four feet in height, the height varying with the pressure and constituting, in the case of mercury, the familiar barometer readings.

This corresponds to a pressure of 2,116 pounds to the square foot, or, as it is more commonly expressed, fourteen pounds to the square inch. A vacuum of fifteen inches, therefore means that the normal pressure is so reduced by the pump that the mercury column would be but fifteen inches high instead of thirty, or, what is the same thing, that the vacuum will create a suction of about seven pounds to the square inch.

The milking apparatus proper consists of a rubber tube of convenient length attached to the vacuum

piping system and leading to the milking-pail, a cone-shaped metal vessel of five gallons capacity. On the cover of this is set a clever device which automatically "breaks" the vacuum at any desired rate per minute, fifty-five being the standard.

From this pail run two rubber pipes, each terminating in four cups which are applied to the teats of the cows; thus each unit milks two cows at a time. At the outer end of each cup is a thin soft-rubber washer through which the teat passes and which, with the cup in position, lies something less than an inch from the udder. Now let us consider just what happens when the machine goes into action:

1. A vacuum is created all around the teat—that is, a suction is applied to it.

2. The soft-rubber washer contracts around the teat sufficiently to stop the flow from the udder down.

3. The milk in the teat below the washer is drawn out and into the pail.

4. The vacuum is broken, the washer releases the teat and a fresh supply of milk flows from the udder into the teat to be again drawn out in the same way.

This is exactly what is done by hand milking, as every milker will realize if he analyzes his hand motions, with this slight difference, that the milk is sucked from the closed teat instead of being squeezed from it. Where each milk-tube joins the pail a section of glass tube is inserted, which allows the flow to be observed and shows when the milking has been completed.



The cows are milked two at a time. They showed no trace of uneasiness or discomfort

The pail used has an upright partition in the middle so that the milk of each cow is kept separate.

Mr. Davisson makes individual tests monthly and records the performance of each cow. He weighs the entire daily product, and so has a complete record of the milk produced by the herd and a substantially exact record of that produced by each individual. This enables him to keep his herd strictly up to standard.

Seeing is Believing

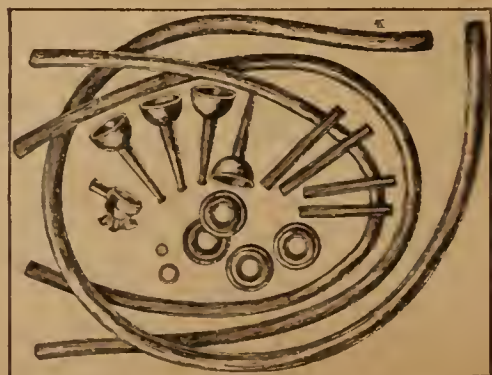
The writer was strongly impressed with the following facts:

1. **Speed**—Thirty-two cows were milked in a few minutes over an hour, with two milking units, or four cows at a time.

2. **Cleanliness**—The writer watched every pail emptied, and there was no trace of dirt on the strainer after the milk of thirty-two cows had gone through.

3. **Thoroughness**—As each pair of cows was milked, Mr. Davisson stripped them by hand, and the entire herd did not produce a teacupful. Just before the cups were removed they were pulled down several times, which has a thorough stripping effect.

4. **Comfort to the Cow**—This was the point on which information was most desired. The writer had been told that the cows were [CONCLUDED ON PAGE 11]



The parts of the machine are simple and can be readily taken apart for repair and cleaning

Timothy with a Taste

The Influence of the Time of Harvesting Upon Yield and Feeding Value

By H. J. Waters

TIMOTHY harvested just as it comes into blossom produces the highest yield of digestible material. If cut before or after this time a smaller yield is obtained. It is true that if cut later more tons of hay are obtained, but it will not be so digestible, nor so palatable. If cut before the beginning of the blossom it is more palatable and slightly more digestible, but the yield is materially less.

The early-cut hay, just beginning to blossom, is more difficult to cure than that cut when the plants are more fully matured, and the earlier the cutting, the harder the crop is on the meadow.

The earlier the hay is harvested, the shorter the life of the meadow will be.

Into the foregoing paragraphs I have condensed for the benefit of hay-growers and feeders of the country the practical results of twelve years of research and observation of this subject at the Missouri Experiment Station by the writer.

The opinions of the most discriminating and experienced farmers differ widely as to the proper time to harvest timothy for the largest quantity of the most palatable and nutritious hay. In the Eastern States the harvest usually begins as soon as the plants begin to bloom, and sometimes even before. The practice of this region is to have all of the hay made before the seed has reached the dough stage. In the corn belt, while the tendency is slightly toward earlier cutting, the common practice is to delay harvest until the seeds have at least been formed and, in most instances, are in the dough state, or even ripe. In the one region early-cut hay, and in the other late-cut hay, is the rule.

It may seem impossible that both of these practices are equally rational. Nevertheless, it is true that the farmers of these two regions are, broadly speaking, handling their timothy with equal intelligence and have in both regions adapted their practices to the conditions under which they labor.

Results on the Yield of Hay per Acre

At the Missouri station experiments were made at five stages of maturity, and the average of all the seasons is given here. Digestion trials with these hays were made with cattle, and in some instances feeding tests were conducted to determine whether the early-cut hays were more palatable to the animals than the later cutting. The five stages of development were:

- First: When the plants were in full head (about June 12th).
- Second: When the plants were in full bloom (about June 20th).
- Third: When the seed was formed (about July 1st).
- Fourth: When the seed was in the dough (about July 8th).
- Fifth: When the seed was ripe (about July 16th).

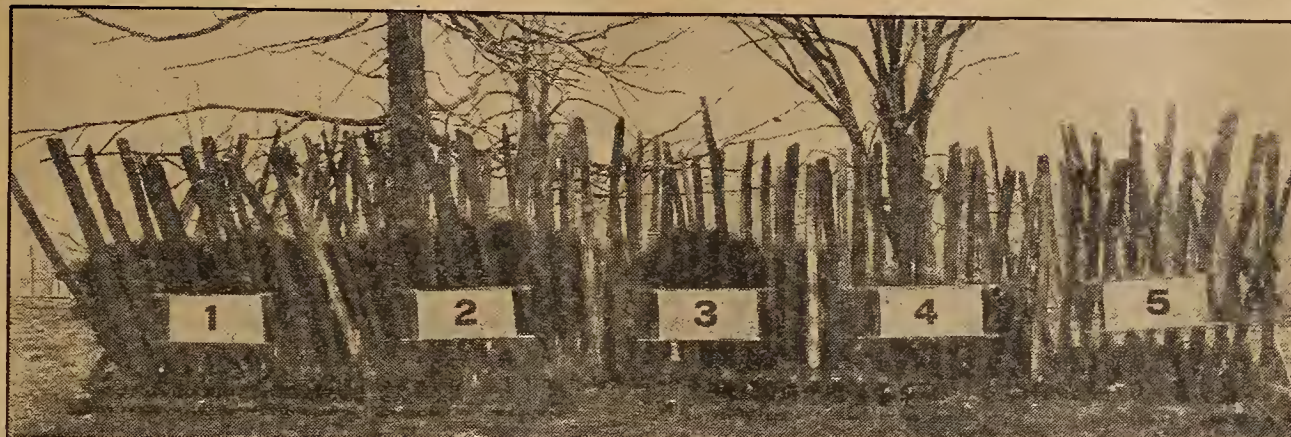
The largest yield of cured hay was obtained from the third cutting. The fourth cutting, when the seed was in the dough, was a very close second. The difference between these two cuttings was only forty-three pounds per acre, or less than one per cent., and may be disregarded. The second cutting (in full bloom) gave 360 pounds less hay per acre.

The first and last cuttings gave nearly a third of a ton less hay to the acre than either the third or fourth cuttings. Thus, if the hay is to be sold, and disregarding the influence of the time of harvest upon the quality and selling-price of the hay, both of which will be discussed a little later, the proper time to harvest would be to begin when the seed was formed, say after the blossom is shed, and complete the harvest by the time the seed reaches the dough state. To begin earlier or delay the harvest longer would mean a smaller yield of the cured hay.

Yield of Dry Matter per Acre

The larger yield of dry matter per acre also was obtained from the third cutting (when the seeds were formed). The fourth cutting (when the seed was in the dough) was a very close second, the difference being only about fifty pounds per acre. The second cutting, when the plants were in full bloom, stood third, with a decline of three per cent. from the fourth. The fifth cutting ranked next, and the first cutting, with the plants in full head, showed the smallest yield of all.

In the digestion trials made with cattle it was



An experiment showing that steers prefer early-cut timothy. One hundred pounds of five different cuttings were put in each of the five racks, and two yearling steers were allowed to eat whichever they preferred. Rack 1 contained timothy cut when seed was fully ripe, while that in Rack 5 was cut when just coming into blossom. The other lots were cut at intermediate stages. The timothy cut earliest was eaten most freely; the late-cut was left untouched.

found that the first cutting was the most digestible, the second next, and so on to the end. In short, the earlier the hay was cut, the more digestible it was, and the later it was cut, the less completely it was digested.

Relative Yields of Digestible Matter

The value of hay as a food for stock depends upon the degree to which it is digested, the ease with which it is masticated and digested and upon the relish with which it is eaten.

As stated above, the less mature the plants are when harvested, the more completely they are digested. It is also true that this hay contained a high per cent. of protein and a lower content of woody fiber than the later cuttings. On account of containing less woody fiber, it is more easily masticated. As shown later, the earlier the hay is cut, the more palatable it is.

If the hay is to be fed instead of being sold, the farmer is principally interested in the amount of digestible dry matter obtained, and not in the quantity of field-cured hay.

The largest amount of digestible dry matter was obtained from the second cutting, when the plants were in full bloom.

From the standpoint of feeding values we may safely conclude that, aside from such considerations as the ease of hay-making, the pressure of other work and influence upon the life of the meadow, the time to cut timothy to secure the highest nutritive value is to begin harvest when the plants are not quite in full blossom and to finish by the time the seeds are fully formed and before they have reached the dough stage. In the latitude of Columbia, Missouri, where the experiments were made, this would mean beginning harvest about June 18th and continuing until June 28th.

Palatability of the Different Cuttings

Along with other practical obstacles to making hay at this time may be mentioned the danger of having musty hay if cut when in full bloom. The eastern practice is to cut before full bloom and immediately after the blossom is shed.

It is held by many farmers in the corn belt that their stock do not like hay made from early-cut grass, and, when given the opportunity, uniformly will choose the late-cut material. This matter was fully tested by putting one hundred pounds of each cutting side by side in long racks and giving two yearling steers the opportunity of selecting the one which they preferred. In every instance, and the experiment was repeated several times each year for three years, they chose the hays in order in which they were cut, usually eating practically all of the first cutting before beginning on the second, and the second before they ate the third, and so on. The upper photograph tells the steers' own story in this regard.

Of peculiar interest, however, was an experiment made with wethers on full feed of grain. In the opinion of the wethers one cutting apparently was as palatable as another, as they ate from all the racks.



Timothy bulbs—In keeping up the stand and in making sure of a good growth next year it is necessary to allow these bulbs to develop. They are not well developed at the time when hay should be cut for the maximum yield of digestible matter, as shown by the experiments, therefore the farmer must either take good hay and short-lived meadows, or long-lived meadows and poorer hay. In rotations the life of the pasture is an unimportant factor.

Dairy cows, in full flow of milk and fed liberally on grain and silage at the barn and having access to racks containing these various hays for a few hours during the day, showed little preference, except to discriminate strongly against cuttings made when the seeds were in the dough and when fully ripe. They preferred the younger hay.

Permanency of Stand

The farmer has long since observed that when early cutting is practised his timothy stand is comparatively short-lived. He has been in the habit of attributing the long-lived stands under late cutting to the replenishing of the stand through

the ripe seeds shattered at harvest. Our investigations indicate that this is not the reason, but that probably the explanation is found in the effect of the time of cutting upon the development of the bulb of the plant.

All close observers know that each timothy-plant has a bulb something like a small onion, in which plant-food is stored for sending off new shoots the next spring and perpetuating the stand. These bulbs are stored with plant-food the most rapidly from the time the plant begins to blossom until it is fully ripe. Necessarily the harvesting of the crop puts an end to the storing of food in the bulb.

The earlier, therefore, the crop is harvested, the less plant-food is stored in its bulbs, and the more it will weaken the plant; whereas, the later it is cut, the better the plant is prepared to send up that fall or next spring strong shoots to withstand the vicissitudes of pasturing and bad seasons.

Convenience of Harvesting

It goes without saying that the later the harvest occurs, the more conveniently the hay may be made, for three important reasons:

First, the plant itself contains less moisture and is more readily cured.

Second, the weather is more settled, the air is drier, the soil is drier, and all other conditions are more favorable for hay-making.

Third, in the corn belt the other pressing farm work is over, the wheat has been harvested, the corn has been "laid by," and hay-making fills a gap when there is no other pressing work to be done.

It is unfortunately true then to cut timothy at a stage of development when the largest yield of digestible material would be secured is to have the harvest come when corn-cultivation is most pressing, when wheat is demanding to be harvested, when clover needs to be saved and when the average farmer has more things to do than any other time of the year.

The timothy harvest must not interfere with corn-cultivation. It must be borne in mind that timothy-hay is a cheap product, and it will not be profitable on the average farm to allow its harvest, which is about the only important labor in connection with its production, seriously to interfere with area of corn to be cultivated or the degree to which the corn crop is to be cared for. That is to say, to neglect the corn, which is the more important and profitable crop, in order to add slightly or even materially to the value of the timothy-hay would not be good business policy.

In the light of this investigation, however, one cannot escape the conclusion that it is important to harvest timothy as early as possible in justice to the other and somewhat more important farm work. To let it go over until the seeds are fully ripe or even in the dough in the hope of improving the quality of the hay or increasing the yield is pursuing exactly the wrong policy and actually incurring a loss. The more mature the plant when it is harvested, the better the hay will keep and the more rain it will stand without much injury.

Selling Qualities and Market Value

I have interviewed the majority of hay commission merchants in the Middle West and East and have learned that the great bulk of the hay which finds its way to market is used for feeding city horses. It is a striking fact that only about five per cent. of the hay going to these markets will grade choice, or command the highest market price. City horse-men prefer and will pay a premium for choice or strictly No. 1 hay, which means clear timothy free from weeds, cured without rain or sunburn, of a bright-green color and

[CONCLUDED ON PAGE 12]

HER "BEST FRIEND"

A Woman Thus Speaks of Postum

We usually consider our best friends those who treat us best.

Some persons think coffee a real friend, but watch it carefully awhile and observe that it is one of the meanest of all enemies for it stabs one while professing friendship.

Coffee contains a poisonous drug—caffeine—which injures the delicate nervous system and frequently sets up disease in one or more organs of the body, if its use is persisted in.

"I had heart palpitation and nervousness for four years and the doctor told me the trouble was caused by coffee. He advised me to leave it off, but I thought I could not," writes a Wis. lady.

"On the advice of a friend I tried Postum and it so satisfied me I did not care for coffee after a few days' trial of Postum.

"As weeks went by and I continued to use Postum my weight increased from 98 to 118 pounds, and the heart trouble left me. I have used it a year now and am stronger than I ever was. I can hustle up stairs without any heart palpitation, and I am free from nervousness.

"My children are very fond of Postum and it agrees with them. My sister liked it when she drank it at my house; now she has Postum at home and has become very fond of it. You may use my name if you wish as I am not ashamed of praising my best friend—Postum." Name given by Postum Co., Battle Creek, Mich.

Postum now comes in new concentrated form called Instant Postum. It is regular Postum, so processed at the factory that only the soluble portions are retained.

A spoonful of Instant Postum with hot water, and sugar and cream to taste, produce instantly a delicious beverage.

Write for the little book, "The Road to Wellville."

"There's a Reason" for Postum.

The Headwork Shop

Made Possible by the Ingenuity of Our Readers

It Saves the Salt



HERE is a salt-box that I have found very convenient and satisfactory in saving loss and waste of salt. The box is made from inch boards. It is three feet high, ten inches wide and fourteen inches from front to back.

The front is hung at the top so as to swing in, allowing stock to lick the salt. This swinging door comes four inches from the bottom of the box. The bottom four inches of the front is made solid, thus preventing the salt from being nosed out.

The box is filled from the top, which is hinged. The salt feeds down to the bottom as used. As further protection from rain, nail it to the trunk of a spreading tree.

J. V. VOLDEN.

Substitute for Hay-Wagon



FOR several years I have used a "slip" instead of a hay-wagon for both hay-fork and slings

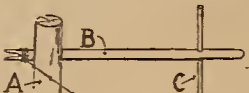
and find it a big labor-saver. While the loads are only from a half to two-thirds as large as those of a hay-wagon, one man can load one as he drives between the haycocks, as he does not have to lift the hay several feet high to get it on the wagon.

The slip "slips" over the stubble tops and does not touch the ground. The bottom boards being elastic lift up a little in front when the team pulls, so it never gouges into the soil. We do our work faster and much easier with two slips than with two wagons, and save one man's work.

The body of the slip is made of eight one-by-two boards eighteen feet long fastened together at front and back by two two-by-sixes eight feet long bolted or nailed over them at the front and back. The standard can be made of any strong material available.

FERDINAND ALERS.

Home-Made Wire-Stretcher



TO MAKE a powerful though simple wire stretcher, take a good tough oak or hickory pole about two and one-half inches

in diameter and four feet in length. With a half-inch bit bore a hole through about six inches from one end, and saw out a wedge-shaped piece back to the hole, as in illustration.

About eight inches from the other end bore another hole. Use a half-inch rod in this about sixteen inches long to twist with. Place the wire in this slot and the stretcher against a post. As you roll it the wire will tighten.

C. K. TURNER.

For the Stubborn Staple



THIS is the handiest of all staple-pullers. The point can be driven under the staple with ease, and by lifting handle

you draw the staple with very little effort. Any blacksmith can make it cheaply. The point should be tempered just enough to keep it from bending, but should not be hard enough to be brittle.

GUS FRENARD.

The Brace is Off the Ground



THE sketch shows a post brace and stay (B) that holds the brace (A) in its initial position till it decays, and also keeps it from contact with the ground. The second

stay (C) should pull on the end post horizontally. Both of the braces are made of strong cable. The entire system of bracing is strong, compact and out of harm's way.

J. B. HUNTINGTON.

Handy Hoe for Plant-Setting



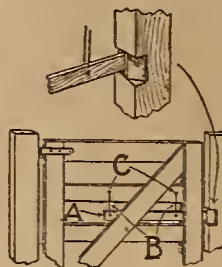
THE best tool for setting any kind of garden plants can be made from an old hoe with a worn-out blade

or broken handle. With a cold-chisel cut off the sides at the solid lines, as shown by the sketch, and leave only five inches of handle. To set plants with it, strike the hoe in the ground, raise the end of the handle, thus pushing the soil back, put the plant in the hole, then take the hoe out, and push

back the dirt. With a boy dropping the plants, I have set one hundred plants in four minutes.

CHARLES WADSWORTH.

Self-Closing Latch

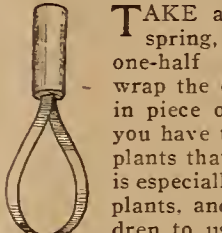


THE sketch shows a latch for a gate which is easily made and which will insure your gate always being fastened by simply swinging it shut.

A short board (A) about three inches broad and a little thinner than the gate board is simply suspended by four wires (B), using small bolts or nails at C. Latch should swing freely, so that when gate is swung shut the latch will be forced back by the beveled notch in the post and then come forward again into the notch in post, which holds gate fastened.

A. C. TAYLOR.

For Young Weeds



TAKE a strong piece of clock-spring, bend in a loop one and one-half or two inches across, wrap the ends with cloth or insert in piece of wood for handle, and you have the best hand weeder for plants that you have ever used. It is especially good for going close to plants, and is a safe one for children to use. They are less likely to tear up plants with such a weeder, because there are no hooks or sharp corners on it.

C. G. McWHORTER.

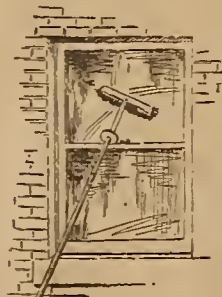
Gate with Foot Latch



THIS gate was invented and has been used on our farm for many years. It is very handy when going through with two pairs or with both hands full. To open it put your toe under the movable upright stick A, and lift up. It raises the latch, and when you have passed through the gate closes and latches itself, for it is hung so as to close when it swings shut. The form of latch is shown just above the first picket to the left in the sketch. This kind of foot opening attachment may be applied to any kind of gate.

W. E. MOXLEY.

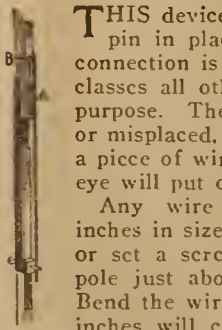
Make Window-Washing a Dry Job



NOTHING is quite so disagreeable as having the dirty water run down from the window-brush when the windows are being washed from the outside. Let the window-washer secure a disk of leather cut from the sole of an old shoe, or a piece of rubber from a tire-casing, or anything that is stiff enough to stand out from the broom-handle. Make a hole in the disk that will permit it to fit tightly around the broom-handle, and slide it up to a point about ten or twelve inches from the brush. This will deflect the water and keep the remainder of the handle dry.

H. F. WARNICK.

Coupling-Pin Key



THIS device for holding a coupling-pin in place on a wind-mill pump connection is a great success. It outclasses all other contrivances for the purpose. There is nothing to get lost or misplaced, and three minutes' time, a piece of wire and a staple or screw-eye will put one on your pump.

Any wire from nine to twelve inches in size will do. Drive a staple or set a screw-eye (B) in the wood pole just above the iron connection. Bend the wire (A) so that about two inches will extend through coupling-pin. The short end of wire should be about four inches long with about one inch bent out at end to keep the wire from coming out of staple or screw-eye when wire is lifted out of coupling-pin.

L. W. MEERS.

Headwork Winner—May Tenth

The first-prize contribution in the Headwork Shop, in the May 10th issue, was "Repairing a Broken Tug," by G. A. Randall.

The best thing to bring home from the county fair, besides a blue ribbon, is the determination to win one



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Farm Notes

The Penniless Farmer's Chance

By Hilda Richmond

IN SPITE of the cry that the high price of land is driving young farmers to other occupations there never was a time when an ambitious young country man had a better chance than right now. It is true that farm lands, implements, the cost of living and clothing are high, but there are some other things high on the other side of the sheet. Farm products are selling at a very high rate, and farm labor is very scarce, and farm opportunities are multiplying every year, so that the opening for young country men is very wide and inviting.

With his bare hands any young man can lay the foundation of a modest fortune in a short time, and do it under the most healthful and invigorating conditions. In other words, there never was such a demand for good tenants as there is at present—tenants, not farm hands. Of course there is a steady cry for farm hands, but a young man should seek a place as a tenant instead of as a laborer, for in the former there are chances that the country is just waking up to all over the land.

Hundreds of middle-aged men in every county in the older part of the farming community are wanting to retire from active work either by moving off the farm or taking a young man into partnership with them. These men feel that they have earned a rest, yet there is no one to whom they can safely entrust their business.

Their own sons have gone to the cities or are settled on farms of their own, and the hired men they are able to get are a vexation to the spirit in most instances. In despair the farmer sells out and invests the money in bonds or something else, to be rid of the care of the farm, and then moves to town. And right here is where the ambitious young man finds his chance.

Practically a Junior Partner

Some of these elderly farmers would be glad to take into partnership young capable workers, and the young farmer would step at once into a well-equipped establishment. The owner and his wife retire to town with the old family horse and seldom bother the tenant from fall to spring, but often drive out in summer-time. If the young man has a sensible, agreeable wife who is willing to do her part in making the arrangement a success, everything is likely to go well, and at the end of the first year the junior partner has a nice little bank-account to show for his labors.

A moment's comparison with the prospect of a shop worker will easily convince the young farmer that the country holds as many chances for money-making as the town. Suppose the shopman gets three dollars per day the year around—a good wage for the average young worker. Out of this amount he must pay rent, fuel, living expenses and light bills, to say nothing of clothing for himself and his family. The tenant gets his fuel free, his living, or most of it, free, and his pleasures in a great measure for nothing. He drives the owner's horse on his pleasure trips, uses the owner's tools to do the work, lives in a comfortable house and has enough butter-and-egg money to supply the family clothing if his wife is a good manager. The town worker may have his little garden and his few hens, but these are not to be compared with the potato-patch, the truck-patch and the poultry-yard out of which the tenant's family lives, almost, and from which supplies are often sold.

Very often much of the furniture is left in the farmhouses by the owners, and this is

Where everything is furnished and the customary two-fifths grain rent allowed, the young farmer can make money. Without a cent invested he gets what he works for in the way of grain and has every incentive to make the farm produce its best.

If the tenant is able to furnish part of the stock or the implements, the proportion of grain he receives is greater. Also, there is a provision made to give him part of the increase of the stock. A hired day-laborer or man working by the month will go to bed and leave the young lambs to chill, but the man who owns an interest in the lambs is on the alert to care for them. The same may be said of all stock. A young farmer ought to be a share renter for the good it will do him in the way of caring for the land and the stock, if for nothing else.

His Tenant Experience Was Worth a College Course

A young man who saved up enough money in eight years to buy a fine farm of his own said that his tenant experience was more to him than a college course. In that time he learned about ditching, pruning, fence-build-



The shower that comes to the city dweller the first of each month

ing, soil fertility and other farm problems at first hand and on another man's land. He had found out defects in farm architecture and farm management, and when he took charge of his own place was able to bring to the work a matured judgment and a knowledge of farming that made him successful from the start.

The mistakes he would have made as a tenant the owner largely corrected, and it was this submission to authority that saved him from many financial losses. He frankly said the farm he would have bought and mortgaged at twenty-one did not appeal to him at twenty-nine. Being a tenant was the right sort of schooling for him, and he was on the alert for a bargain in farm lands. He had learned much about defective titles, poor soil, undesirable neighbors, locations that sell well and those that are a drug on the real-estate market, and hundreds of other essential things.

Another but less desirable chance is the one where the town man owns the farm. There are advantages to this sort of tenant-farming as well as disadvantages, for the city man is almost always eager and anxious to buy the latest improved machinery and fine stock. The elderly owner of the soil who has lived there most of his life is conservative and slow-going, but the city man wants to have a farm up-to-date in every particular.

All he asks is a fair financial return, and he is willing to provide the funds to keep the farm going. In many ways the city owner is really better to deal with than the country owner. The craze for farms by city people has multiplied the chances of the penniless young farmer many times, and any faithful, competent farmer can easily find a good place. A city man hunted the country over for a farm worker at a good salary, but found no one who wanted the job. They were all provided for with share farming, or else were refusing to take any but such work, saying that working by the month did not compare with tenant-farming.

Don't Mortgage Your Happiness

But the best of it all is that the young farmer has a chance to make money on the share plan without being burdened with debt. A small debt is a great incentive to thrift and hard work, but too often the young man mortgages more than the farm when he buys land and has little or nothing to pay down. He mortgages the health and happiness and enjoyment of his whole family many times, and in the end is a soured, disappointed man without a home at the very time when he needs a home the most. It sounds very alluring, this talk about a home of one's own, but a farm mortgaged to the limit belongs to the man who owns the mortgage, not the struggling man who farms it.

Better start in a healthy, sane manner as a tenant, particularly when there are such good prospects for tenants, than to struggle with hopeless debt for years and years. The tenant has many opportunities over the man hopelessly in debt, and the country is just waking up to this fact.

With no taxes to pay, no rent, no fuel to buy and a very low expense-account for living he can enjoy his work and keep

healthy and happy, and, best of all, he can be acquiring such a fund of knowledge and experience that when he has the ready cash to buy his own farm he will get the very most for his hard-earned money and be on the highway to success from the very start.

The Back-to-the-Lander

By Robt. M. McCabe

NOW and then, when you're on the hunt for those who tried and didn't, you'll find a fellow who struck off the farm when he was in his teens, putting up all his betting-money at about 100 to 1 odds that he'd strike twelve in the busy marts of the great metropolis, where mother went by interurban every bargain Monday to be one of the guests at the big bargain festival which broke frequently at Beldenheimer's store upon the slightest provocation. You'll find such a one landing in a few years at a mahogany desk, the fitting accompaniment to a job that pays less in a month than the same desk cost, for the kings of finance and the successful pursuers of the elusive gold coin are long on desks.

How He Climbs

Your discovery started early in the game before the competition got too keen, touting it as a cinch that he'd be a bloated bondholder and chief custodian of the key to the government's money-making machine in a few years, with fair play and no favorites. After catching on as manhandler pro tem. of the office broom and successfully mastering the accomplishment of persuading the imitation tile floor to yield liberally of its microbes daily at about 5:30 A. M., the ambitious climber with the future hog tied in a sack is appointed to official opener and distributor of the mail. Then by inches and hunches, instead of the fabled leaps and bounds, he rises up to the extent of signing the vice-secretary's name to the circular letters dopping out some sure way to the rapid accumulation of the mazuma.

He Finds the Answer

While getting there he had taken on a girl wife as a starter for the family, which costs more for upkeep than a two-cylinder, six-passenger runabout. About the time the collectors for the Dry-Goods Emporium, the meat-market, the egg-dispensary and the milk-factory begin appearing oftener than the boss with a kick, he begins to shoot inquiries at himself, such queries tending to the point that he acted like a dilapidated question mark when he left home and hit the trail for the garden where the simoleons are supposed to grow on rubber-trees and multiply like a family of guinea-pigs, and where the big ones are supposed to gather and pluck all the loose change from the safety-deposit boxes of the alleged easy looseners in the tall-grass regions.

About the only answer he can find to his own riddle is that he was a solid head for ever saying good-bye to the land of the free and trading an easy start and a soft going for a hard chair and a continuous jar. And then he gets his intellect back in the corner and finds out the answer.

He wants to get back to the soil, as other men have done; he thinks he'd like to toil beneath the kind June sun. He knows he'd like to pail the cow and herd the lowing sheep; he has it figured out just how many pigs and ducks he'd keep. He thinks he knows about the corn, the oats and barley too; he wants to rise at early morn, the dairy work to do. He wants to change his office chair for God's great out-of-doors; he wants to get most anywhere to farm and do the chores. He thinks he'd like a motor too, and hens and geese and things; he knows he'd like farm work to do and get the joys it brings. He's tired of city's moil and strife, he seeks for joy each day; he wants to live a carefree life—and thinks he knows the way.

When Spraying



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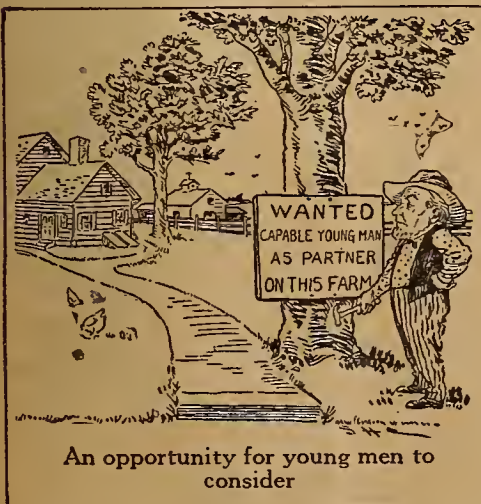
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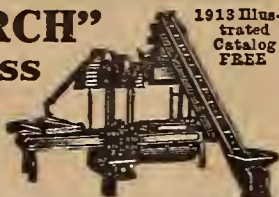
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Crops and Soils

Boys and Bushels

By F. R. Miller

WHEN the boy corn-growers of Hamblen County, Tennessee, met the other day to file their final reports and receive the numerous and liberal prizes offered by the business men of Morristown, those who had been instrumental in organizing the club found a number of pleasant and encouraging surprises in store for them.

County and State Averages

Fifty-two boys secured yields in 1912 of sixty-four to one hundred and eighteen and one-half bushels per acre. Six of the number secured one hundred bushels or more per acre. Hamblen, by the way, is the only county in eastern Tennessee in which more than three one-hundred-bushel yields were secured. The average yield per acre for the fifty-two boys was ninety-one bushels. The highest average yield in Hamblen County heretofore has been twenty-five bushels. The average for the State is twenty-six.

A number of boys reported that their fathers had become interested in the instructions sent out by the United States Department of Agriculture, and had followed them in their corn-growing this year.

One of these farmers secured a yield of five hundred and fourteen bushels from ten acres of upland. His boy, who had selected a piece of bottom-land, was less fortunate. Continued rains interfered with cultivation and replanting, and the boy harvested only seventy-five bushels. But his father, who a year ago laughed at the principles of modern agriculture, has learned the lesson and will farm no more in the old way.

At a meeting of the boys early in the spring I turned to an old gentleman sitting near by, at the conclusion of an address by one of Uncle Sam's demonstration agents, and asked, "What do you think of it?" referring to the expert's explanation of the new method of raising corn. "Sounds fine," he replied, "and looks good on paper, but it won't work out on the farm. I've been raising corn all my life, and I think I know a thing or two about farming. However, if my boy wants to try it, he can have any piece of ground I've got, and I'll help him, for I want him to have a chance at everything good that comes along. If he raises more corn on one acre than I do on five, I'll admit that my father, grandfather and I were all wrong, and begin farming the boy's way."

Father Enthusiastic Over Son's Success

The old gentleman's boy secured the third largest yield in the county this year and at an average cost of only fifteen cents per bushel, on upland. I saw the father the other day and reminded him of our former conversation. He had learned the lesson and enthusiastically told me of his plans for the coming year. If they are carried out that man will realize more from his farm during the next five years than he has in all of his forty years' experience.

Hill Culture for Strawberries

By W. D. Boynton

IN ANY section of the country where the strawberry-vines do not require winter covering the hill system of growing is by far the best. The matted row is a sort of lazy man's practice at best. It seems to offer the easiest way out for the strawberry-grower.

In nearly all portions of the West, where high intensive culture is applied to all fruit-growing, the hill system is strictly adhered to in the growing of strawberries. Growers are after high-colored and firm berries for long-distance shipments, and they find that hill culture alone produces those desired qualities. The total yields are about the same, even when the hills are thirty inches apart each way, as is the custom with the Coast country planters. The berries are so much larger and uniform in size that the yield is kept fully up to the matted-row product.

Even at thirty inches the ground is completely occupied by the roots, which these hills send out full fifteen inches when they have the opportunity. While there is but the one plant in the hill, it throws up four or five heads from this one big root system with large rich feeding-ground, and the fruit-stems are enormous in size.

The cultivator is run both ways, so that the whole surface of the ground is constantly worked, thus providing that all-important adjunct of good culture, a dust mulch over all the surface. In the matted-row system the culture is but partial at best, and fully half the surface is of weedy, packed ground, from which evaporation of moisture is constantly going on. And then, too, under the hill system the field can be retained longer in bearing, since it is always kept clean, and no crowding occurs. The latter makes the life of the matted field one of short duration.

The hill field is always left as much as three years, and sometimes four years. With the constant close-up-about-the-hill cultivation, fertilizers can be worked in when necessary.

Picking is Easier and Waste is Reduced

Of course the great objection that is generally made to this hill culture is the labor of keeping down the persistent runners, especially the first season of setting the bed. The cultivator will keep them swinging around so that they do not take root, but occasionally the grower must go through and cut them back, so that the main hill will not be robbed of its strength and sustenance. The succeeding years are not nearly so bad. On the whole, it is doubtful if the matted-row system lets the grower out with any less labor. He must plant his patch oftener, and it is much more work to cultivate and weed it out in the matted row. Picking goes rapidly from these large distinct hills, with their large and evenly sized fruit, so that on the whole it is like most other lazy men's methods, this matted-row business, and really makes him more work than if done right from the start.

The picking in the matted rows by the usual heedless help is a wasteful slaughter of the green fruit. The vines are mauled about and sat upon so that the next day's hot sun will cook them. The berries of the hill plan are in small distinct clumps and offer no temptation to mash down, as the fruit hangs out on all sides in plain sight, constantly exposed to the sun. I have seen an occasional picker take eleven twenty-four-box crates from hills in a day, which could hardly be done from the matted row. As the berries are in plain sight and very large, there is not the temptation for the picker to take under-ripe or over-ripe fruit or culls.

Especially in places where the space is very limited, as in town gardens, the hill system is attractive both from its economy of space and in regard to the neat appearance of a hill patch. These hills can be protected for the winter by using a little more hay or straw. Of course the very nature of the matted bed helps to carry it through the winter, as it furnishes part of its own protection, and even if a few plants are lost it is not so serious as to lose hills.

Waste

By Berton Braley

FOREST and field and orchard, mountains of coal and ore, Mighty has been their bounty, limitless seemed their store; So we have blithely squandered, so we have sacked and spoiled. Boasting about our "progress," bragging of how we toiled, Drunken with nature's bounty, we laid our plenteous gain To the magic of Yankee hustle, to the vigor of Yankee brain. And we looted the goodly forests and planted the wasteful crop, And we hooted the careful prophet who said that the loot must stop!

But we're learning our little lesson, and we relish it not at all, And we're paying for past excesses in bills that are far from small. We gutted and gouged our forests—and the floods came roaring down To ruin the farmer's acres and ravage and wreck the town. Over and over and over we planted the same old field, With the same old crop repeated, then sighed at the dwindling yield. And we wasted our coal and iron, nor cared for the wealth we lost, Till the price moved up and onward, and we growled at the added cost.

We are learning our little lesson, but we have not learned it true, For we waste in some directions the same as we used to do. Our natural gas we squander to poison the healthy air, We're wasting our oil-flow blindly, and nobody seems to care. In factory, farm and forest we're throwing our wealth away, And the bill for our careless living our children will have to pay. Tariff and trusts and wages are problems that must be faced, But the greatest of all our problems is the problem of careless waste.

The Decline of Hemp

By Calvin Frazer

THERE was a marked improvement in the prices paid for American hemp in 1912, and there are other tokens that this crop is entering upon a new era of prosperity in the United States. According to Lyster H. Dewey, in charge of fiber investigations in the United States Department of Agriculture, the previous decline in the hemp crop of this country, from nearly 75,000 tons in 1859 to 600 tons in 1911, was due to the following causes:

1. The replacing of hempen "homespun" clothing by cotton.
2. The displacing of sailing-vessels with hemp rigging by steamships, and the further fact that the ropes now used on both steamers and sailors are of abaca (manila hemp) instead of true hemp.
3. The use of jute instead of hemp to cover cotton bales, and even for carpet warp, webbing and twines, where hemp, stronger and more durable, would be better.
4. The improvement of machinery, and consequent decrease in labor, for the production of other staple crops, with comparatively little improvement in the machines for harvesting hemp and preparing the fiber, resulting in an increased net profit in other crops as compared with hemp, in spite of the advancing price of the latter.
5. The lack, outside of a limited area in Kentucky, of detailed knowledge of the processes of growing hemp and preparing the fiber.

According to the same authority the hemp industry needs for its development in this country improved machinery for harvesting the crop, improved machinery for breaking the retted stalks and scutching the fiber, but above all more general recognition on the part of the public of the strength and durability of hemp as compared with the cheaper but inferior jute.

Inferior Substitutes Have Taken Its Place

The same statements apply to the hemp industry throughout the world, so far as the production of fiber is concerned, as this fiber has everywhere suffered from competition with cotton and jute. Of the other hemp products—resin (from which powerful drugs and intoxicants are made in oriental countries) and seed—only the latter figures among American industries. Nearly all the hemp-seed grown in America comes from a narrow strip along the Kentucky River.

Hemp has been grown in the United States for about 135 years, and the chief center of the industry has always been the bluegrass region of Kentucky, where nine tenths of the hemp crop of this country is still produced. It is said that shortly before the Civil War hemp contributed more to the wealth of central Kentucky than all other crops combined. Kentucky hemp is still, for the most part, broken on old-fashioned hand-brakes, with which one man can produce hardly more than one hundred pounds of fiber a day. However, during the past five years several machines to do the work have been introduced, with improved results.



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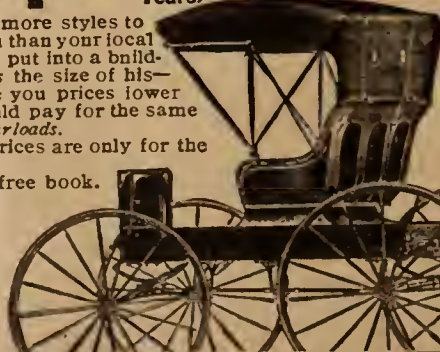
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GARDENING

BY T. GREINER

Money in Squashes

WE MEET no great difficulties in raising winter squashes, of which the Hubbard is the old standard variety, but the newer, drier Delicious is often more pleasing to the consumer. If limited to a home trade, either direct to the consumer or to the green-grocer, winter squashes usually leave us a fair margin of profit. For wholesale production they are a more precarious crop, as the specimens must be handled rather gingerly and never allowed to be touched by the least frost.

They are also subject to various diseases, rots or decays, and one must be quite particular as to storage conditions. So before going heavily into winter-squash raising, be sure you have the market for the product, or the storage facilities.

I usually plant winter squashes in the sweet-corn patches, as a secondary or companion crop, just as farmers raise pumpkins in the corn-field. Then I have another little patch where they grow all by themselves. The land should be warm and rich. It will then take but one or two plants standing in hills ten to twelve feet apart each way to cover the entire patch with vines and give a big lot of squashes in the fall. We plant much more seed, but pull up the surplus plants as soon as danger from bug and beetle attacks has passed.

Spray the vines with Bordeaux mixture to which arsenate of lead has been added in the proportion of an ounce (paste or dry) to one and one-half or two gallons of water. Begin as soon as the plants are fairly up, and repeat from time to time as may be needed. This will protect the plants from attacks of flea and striped beetles.

Gather the squashes carefully, before the first fall frost, and store them in a dry and warm place. I have kept them in good condition up to spring, stored on a shelf in a moderately dry, ordinary cellar. But it is better to sell them as soon as possible after harvesting. They bring from three-fourths to one and one-half or even two cents per pound, wholesale. Consumers here in western New York are paying, at this writing, five cents per pound.

As with other crops, the yield varies greatly, depending on richness of land, cultivation and length of season; but I find squashes a reasonably dependable crop, and can raise a ton or more in a quarter-acre sweet-corn patch. Winter squashes are one of the small side lines in farming particularly promising for the boy who wants to earn a little pocket-money.

Propagating Various Shrubs

The best way to propagate the California privet is by hard-wood cuttings made in the fall, buried in sand over winter and planted in nursery rows in spring. Bridal-wreath and other spiræas are usually increased in the same manner, but can also be grown by seeds sown in spring and lightly covered.

The syringas (lilacs) are very readily increased from suckers, but can also be propagated from hard-wood cuttings like the privet. The honeysuckles (Lonicera) are increased by seeds, or by cuttings of ripened wood made in fall and treated as stated for privet, or by green-wood cuttings under glass in summer. The tamarisk may be increased in the same manner as the honeysuckle.

It is really no great trick to increase many of our common and popular ornamental shrubs by cuttings of the ripened wood, or in some cases by suckers. Sometimes neighbors are very glad to buy some of these plants.

Horseradish for Profit

You can easily grow all the horseradish the family may want. It will grow in almost any soil, even if rather moist or wet, in any fence-corner, chip-yard or weed-overgrown spot anywhere on the premises.

A piece of root, or a crown from which the edible root part has been removed, buried in the soil, will soon start a plantation. It is far more difficult to eradicate it than to set it going.

Yet I would hesitate to give the general or broadcast advice to engage in horseradish-growing for profit, commercially or as a specialty. The market gardener who has a good retail trade, and can work off a proportionate amount of either roots or the grated product, with the rest of his vegetables, must or should have it. It will pay him well, even if his soil is not an ideal one for the crop, for he can work up roots (by grating) that he could not sell to advantage in a wholesale market. To ship horseradish to a general market, as roots, they must be such as buyers want, something like the ones shown at the extreme right in the picture.

These roots were bought on the public market in Buffalo at six cents each. To produce them the soil must be clean and deep and loose, and special pains may have to be taken even then in order to prevent the growth of a lot of side branches. In

our stronger loams that are somewhat shallow and rest on clay hardpan we are apt to get roots of the kind shown at the left of the picture. A nice, sandy, mucky or peaty loam, rather moist than otherwise, is what you want for commercial horseradish-growing. It is best grown as a fall crop, to follow early cabbages, early cauliflower, peas and similar early wide-planted crops. It makes its best growth with the beginning of cooler weather in the fall. Pieces of the side roots, perhaps of pencil thickness and from three to five or six inches long, may be planted in early spring, by means of a small iron bar, so that they can be put down rather deep, between the rows of



The roots and the finished product

other earlier vegetables. Have the horseradish-roots at least a foot apart.

In cultivating, pay no attention to the horseradish. You cannot hurt it much. Keep it down until the early crop is ready to harvest. Then let the horseradish grow. The roots run down quite deep, and much pains must be taken in digging to get as much as possible of the straight root. This

is quite a task in our clay loam. Dig the roots before winter. If not disposed of at once, they can be stored in a root-cellar or buried in sand and worked up during the winter. The grated horseradish, as offered by our groceries, is put up in bottles, such as is shown in the picture; the total weight is about one pound, and the contents weigh slightly over one-half pound of the prepared mixture of grated horseradish and vinegar. It sells at retail for ten cents.

Worms Destructive to Vine Fruits

Widely distributed, but particularly destructive in the Southern States, is the melon-caterpillar, larva of a beautiful moth with pearly-white, black-bordered wings. The full-grown worm is about an inch and a quarter long, translucent and of yellowish-green color.

These caterpillars do not only eat the leaves, but also dig cavities into the fruits of melons, cucumbers and pumpkins at all stages of growth, and often do a vast amount of damage. Watch for the first appearance of the enemy, and apply remedies promptly. You will find nothing surer to destroy them than arsenate of lead, say an ounce to the gallon of water or Bordeaux mixture, sprayed on the vines.

We begin this treatment early for the flea-beetle and the striped cucumber-beetle. When the fruits begin to get some size, we may hesitate to apply such powerful poison and will find it safer to spray the vines with white hellebore, an ounce to the gallon of water. This treatment will also be found effective for the "pickle-worm" which is the larva of the "neat cucumber-moth" that closely resembles the other in appearance.



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Watch These Things

By R. E. Olds, Designer

The leading cars this year have these features in them. They are things you should insist on.

Left Drive

Practically all the great cars of 1913 have the left-side drive. That means, of course, that others must adopt it.

They don't have projecting side lamps. They use electric set-in dash lights, as used on Reo the Fifth.

They are not under-tired. Skimpy tires, which double one's tire bills, are now much out-of-date.

Better Parts

Then today's idea among leading makers is to build enduring cars. To cut down cost of upkeep.

The best cars now, for years and years, will run as well as

new. But that isn't so with cars hurried and skimped—cars merely made to sell.

Note what it means to build a really honest car.

Reo the Fifth is built of steel made to formula—steel that we analyze twice.

Its gears are tested in a crushing machine of 50 tons' capacity. Its springs are tested for 100,000 vibrations.

Each driving part, as a margin of safety, is 50 per cent overcapacity.

We use 15 roller bearings, costing five times as much as common ball bearings. We use 190 drop forgings, to avoid the risk of flaws.

A \$75 magneto—a doubly-heated carburetor—tires 34x4.

Parts are ground over and over to get utter exactness. Engines are tested for 48 hours. Cars are built slowly and carefully. There are

countless tests and inspections.

Every Reo the Fifth marks the best I know after 26 years of car building.

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And it has the new control. All the gear shifting is done by a single rod between the two front seats. It is done by moving this rod only three inches in each of four directions.

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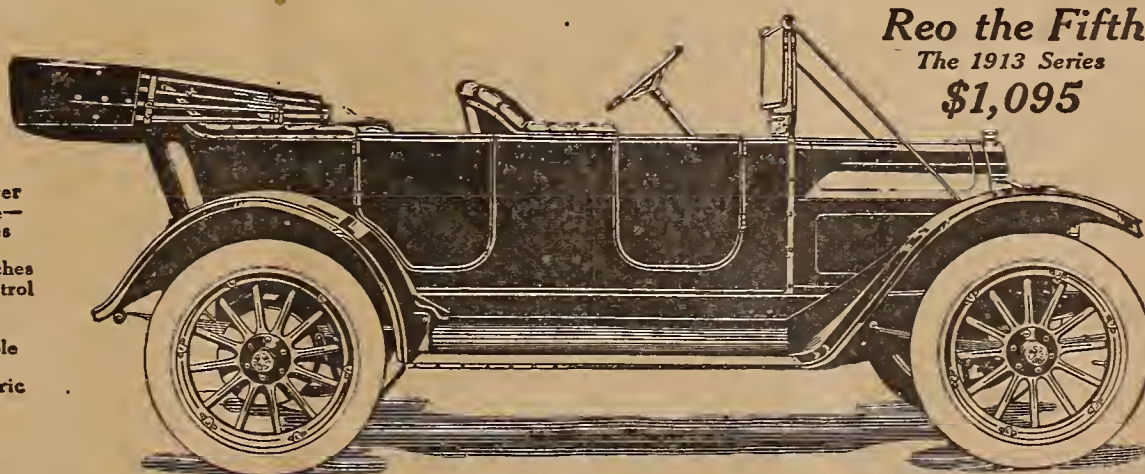
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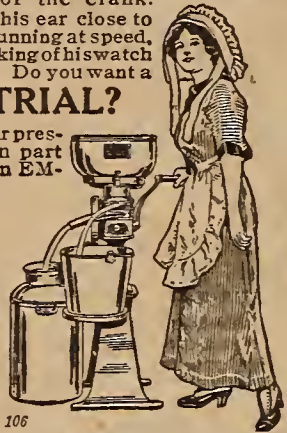
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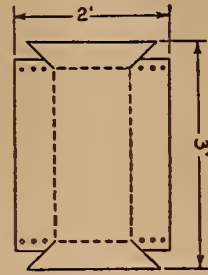
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Poultry-Raising

Sanitary Dust-Bath

By Mrs. A. B. Ewer



I PROVIDE my hens with a metal dust-bath box set in the ground. I think it is much better than a wooden box set on top of the ground, as it can't tip over and also has the advantage of making the hens think they are really scratching in the ground. Hens will use this box more readily than one they have to climb into.

To make this box, get a piece of galvanized iron, and cut as diagram shows. An old galvanized stock tank may be used.

A metal box like this has no place for lice to breed in as a wooden one has; nor will it swell from the moisture in the ground as wood does. Fill the box with road-dust to which has been added a small amount of good insect-powder.

Beans as a Poultry Feed

By A. E. Vandervort

IN ALL my reading of poultry literature and of all the poultry plants I have visited, I have never found beans recommended or used as a feed for poultry. I have used them and with very good results. Of course hens will not eat raw, ripe, white beans. If one does, it is an exception—a phenomenon. In time of drought, when grass is dry and parched, hens will pick open the green pods and eat the green beans if they can get them. Neither are hens exceedingly fond of cooked beans, yet I have found that when mixed with ground grains and fed as a mash they eat them readily.

If the reader has ever thought of the matter, he or she will have discovered that the housewife seldom or never serves both eggs and beans at the same meal, nor does the ordinary individual care for those two kinds of food at the same time. Therefore, aside from any scientific knowledge of constituent food elements, we conclude that beans are a feed adapted to egg production.

Then again, except for fattening, hens do not require a concentrated grain diet, like corn, wheat, buckwheat and millet. So we mix such grains with oats and barley to help fill the hens without overfeeding.

Add Some Little Relish

Now, I would not recommend buying beans at two dollars a bushel or upward for hen feed. In localities where beans are grown extensively cull beans are quite common. The cull beans, consisting of splits, unripe, discolored or partly decayed and then dried beans along with some gravel and lumps of clay, are bought by farmers for feed for hogs and sheep. The usual price is about one dollar per hundredweight.

Time and fuel are important factors when considering cooked feed or raw grains. Where the housewife can put a kettle of cull beans on the kitchen stove and cook them without keeping up a fire for the beans alone there is no additional expense and such feed is cheap; or, where the farmer has an outdoor cooker and cooks his feed every day for hogs, it is a very small chore to dish out a few of the beans for the hens. Three or four times a week is often enough to feed beans to hens. Put a few potatoes, apples or vegetable parings in with the beans as a relish; and do not forget to salt them just about as you would for yourself.

How to Fight Vermin Successfully

By A. E. Vandervort

MANY people to-day who raise poultry know how to prevent and to exterminate vermin, but to do the work at just the right time seems to trouble them. These insects have such strong powers of reproduction that oftentimes a few days of neglect will overwhelm the whole flock. This is especially true of the little red mite. During chilly or real cold weather they neither breed nor feed, but woe unto poor hens at the first approach of warm weather. These pests approach the fowl only at their feeding-time, suck what blood they need and return to their hiding-places, which are always beneath the perches and in the nest-boxes. If not checked they will spread to every crack and crevice in the house. Prevention is therefore most important. First, all roost-rooms should be smooth, making as few hiding-places for the mites as possible. Second, perches and nest-boxes should never be nailed as permanent fixtures in the house. They should always be removable. Third, the greatest degree of cleanliness should be observed, especially during very warm weather when the mites are most active.

When these pests have once obtained a foothold in your poultry-houses they must be exterminated, and for this purpose nothing is better or cheaper than kerosene. It is one of our household necessities, and is always ready and handy. Besides, it is far more penetrating than anything I have ever tried. Spray it into every crack and crevice in the house. The morning is the best time to do this in order to allow the air to become purified before roosting-time at night.

The perches and nest-boxes should also receive a treatment. Some like whitewash better. It is all right, providing it is done thoroughly. For whitewashing the best method is to fill a fifty-gallon cask pretty full of good, fresh, hot whitewash and dip the nests and perches in it. Use a brush for parts which cannot be immersed in the whitewash. Whitewashing the house all over gives it a very neat appearance and at the same time kills the vermin. This is best applied with a good sprayer.

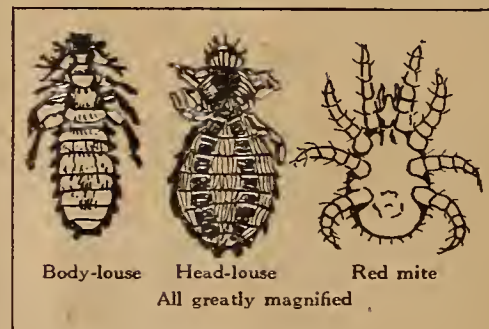
Use Insect-Powder for Body-Lice

Body-lice, which are most destructive to the health of the young stock, are the primary cause of many chicks becoming stunted. Furthermore, a flock of fowls infested with body-lice require at least twice as much food, and a general weakness is bound to come over a flock, which makes them easy victims to disease.

Body-lice are on the body only. Their breeding-place is below the vent of the fowl, and their eggs are attached to the base of the feathers, as that is the warmest part of the fowl. Incubation is rapid and perfect. In looking for these you must be quick, as they escape as soon as you open the feathers. They are not blood-suckers, like the red mite, but live mostly on the scales of the fowl's body. These scales are necessary to the fowl's health. A dust bath aids in keeping body-lice in check and is the natural method of protection, but can never be depended upon as a cure. To exterminate body-lice use a good insect-powder. Take the fowl by the feet, thrust her head into a galvanized iron half-bushel or similar receptacle, so that all powder that does not go into the feathers can be saved for future use. Dust her feathers full. If the powder is good and the work thoroughly done, there will be no live lice ten minutes after the operation. Do not stop with a single treatment, for there is another crop that will hatch from the nits. To make a clean sweep a second treatment must be given after a week or ten days, and you will have no more body-lice.

The head-lice are entirely different from the other kinds of lice, and are true to their name, as they are never found anywhere but on the head and neck. At molting-time as many as half a dozen may be found on a single quill. They are also very common and destructive among young chicks. To get rid of head-lice apply equal parts of sweet oil and kerosene to the feathers of the head and neck. A few drops will do the work. One treatment is hardly sufficient in most cases, so I would advise a second application a few days later.

Some ask me why either treatment will not kill both kinds of lice. It will do no



harm to apply the powder to kill the head-lice, but it is impossible to get the powder at the base of the quills of the neck to catch all, hence a penetrating oil must be used. Then if you use the oil treatment for the body-lice, applying it to all parts of the fowl's body, it would result in the death of the fowl, because all the pores of the body must not be closed at once.

Hens for Incubator Chicks

By Mrs. S. L. Reynolds

I HAVE found that it takes a good deal of time to give the little flock in the brooder proper care, and even then many die or are accidentally killed. So I plan to make my hens raise my chicks.

After they have been sitting a few days on nest eggs, I place the incubator chicks under them at night. The next day I remove them from the nest to a neat little pen about six feet square made of chicken wire having a good coop attached.

One hen can easily care for thirty chickens by being confined to a small place until the chickens are six or eight weeks old. For the first ten days I feed some good chick food and occasionally a good feed of hard-boiled eggs mashed fine. After this age they can eat cracked wheat, but if I have plenty of eggs I continue the hard-boiled egg diet until chickens are of good size. The pen may be moved frequently to give fresh grass and new ground.

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\$24 Buys the New Butter-fly Jr. No. 1. Light running, easy cleaning, close skimming, durable. Guaranteed a lifetime. Skims 95 qts. per hour. Made also in four larger sizes up to 5-1-2 shown here.

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HOLD SHOES BEST

Live Stock and Dairy

A Self-Spreading Gambrel

By Percy A. Hilts

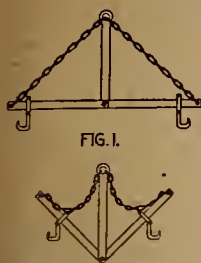


FIG. 1.

FIG. 2.

THOSE who use old wood gambrels know how disagreeable it is to keep more than one size, or have a large gambrel and a small hog, or vice versa. This causes trouble, and often the animals slip off.

The following gambrel is made of iron 1½ by ¾ inches. It is easy to make, and is adjusted to

fit all sizes of animals by moving the hooks. All the materials necessary are: 2 pieces of iron 1½ by ¾ by 21 inches, 1 piece of iron 1½ by ¾ by 24 inches, 2 pieces of chain 26 inches long, 3 bolts, 2 rivets and 2 hooks. The illustrations show how the gambrel is put together.

Brood-Sows—What Not to Feed Them

By J. S. Underwood

MANY fine litters of pigs are lost, especially at the time when some farmers want to be particularly good to their brood-sows by giving them too much feed the first three days after farrowing. The experienced brood-sow, should she be allowed to have her own way pretty largely at that period and if given the range of the farm, will prepare her bed carefully on the south side of the hill or with some other protection from the northwest winds. If possible she will make her bed near a spring or slough.

When to Avoid Heating Foods

She will eat nothing the first day. The second day she will probably go to the spring and take a drink. The third day she may be looked for to come home bringing her pigs with her with pardonable pride and will usually bring a full, healthy litter. It is not always prudent to give the brood-sow this liberty, especially the highly bred sow or the young sow that is expected to farrow her first litter. By studying nature we can provide better quarters than nature will furnish, can take advantage of the instinctive wisdom of the brood-sow and also of the wisdom of man. Upon one point, however, nature is inexorable, the brood-sow must not be fed heating food the first three days after farrowing. To do so is to invite caked udder or what is known as milk-fever and kill the pigs.

Feed for Milk—Not for Meat

The first day I give nothing but water, the second day I stir a little bran in it, the third day a little bran and oats are added, the fourth day I add a little corn, but the sow is never allowed a full feed of corn for a week or ten days. There is no trouble in giving bran or shorts or ground rye or barley in the form of slop. In other words, the brood-sow with a young litter of pigs should have a dairy cow's ration.

She should be fed for milk production and not for meat. It is well to remember that for the first three days after farrowing the system is in a feverish condition, and that in fever there is no appetite. Therefore, to encourage a sow to eat food such as corn is to invite disaster. I never give sour milk to a brood-sow with a young litter of pigs, as it will cause scouring and ruin the prospects of the litter.

Scratches, Grease and Grease-Heel

By Dr. A. S. Alexander

EVERY reader knows well from experience that constant washing with soap and hot water and failure to perfectly dry the skin in cold weather commonly causes chapped hands. "Scratches" in horses is often caused in the same way. White fetlocks and pasterns most readily become soiled; therefore, they are most often washed by the attendant, who then seldom dries the skin perfectly. Inflammation of the skin (erythema) results, and after a time cracks and sores form as the horse is worked. The white skin is not especially tender. That is the general but somewhat erroneous belief. It is the washing and lack of drying that cause most cases of scratches. Others come from wetting of the skin by rain, snow, slush or mud.

Dry with Sawdust

When the horse comes into the stable with wet, muddy legs, let the mud dry in place; then rub and brush it away. If washing must be done, afterward dry the skin perfectly by rubbing with fine sawdust. It is best not to wash the horse's legs from November to May. Allowing a horse to stand in a cold draft in the stable is also likely to induce scratches, and especially so if the legs are wet. Grease and grease-heel are aggravated skin troubles of the fetlock,

pasterns and heels. They commonly affect heavy draft-horses ill-treated in the manner suggested above. Cleanliness and abundant work or exercise make them uncommon ailments.

Medicinal treatment will fail, unless all contributive causes are absolutely removed. In simple scratches do not wash the parts. They may be poulticed for a few days with hot flaxseed-meal; then wash off, dry thoroughly, and twice daily apply an ointment composed of four parts of sulphur, two of spirits of camphor or compound tincture of benzoin and eight parts of lanolin, lard, vaseline or petrolatum. In old chronic cases, where the skin of the heels is thick, hairless, calloused and cracked, cleanse thoroughly, and blister with cerate of cantharides to remove the unhealthy scarf-skin. Wash off the blister in two days, then apply the sulphur ointment twice daily.

Keep the Horse Outdoors

Benzoated oxid of zinc ointment also is effective in scratches, as is a mixture of one dram each of boric acid, iodoform and compound tincture of benzoin to an ounce of glycerin. In grease and grease-heel there is a bad-smelling discharge from the sores, cracks and growths of the affected skin.

The horse in such cases should be made to live an outdoor life on grass in summer and on a diet of roots, corn-fodder and mixed hay in winter. The most stubborn of chronic cases have been perfectly cured by this means. Local treatment consists in removal of the red grapelike growths present on the skin of the fetlocks and pasterns, and then wetting the skin with a 1/500 solution of corrosive sublimate once daily and afterward dusting thoroughly with a mixture of equal parts of calomel, boric acid and iodoform.

Or, the leg may be cleansed by applying for a few days hot flaxseed-meal poultices, in each of which has been mixed a few tablespoonfuls of powdered wood charcoal and two drams of carbolic acid, lysol or coal-tar dip. After treatment consists in using the corrosive-sublimate solution every other day and twice daily applying a lotion of two ounces of sulphate of zinc in a pint of water. Good results have also come from persistent use of a weak solution of concentrated lye.

Roots—The Confection for Live Stock

By John P. Ross

THE philosopher who condensed a great idea into the homely phrase, "When you see a good thing push it along," was of course an American. No other people under the sun are as enthusiastic as we are in following the great unknown's advice. The only drawback from its value is that sometimes we allow our zeal in following it to slop over.

We are too prone to forget too, in our admiration of the new stone bridge, how the old wooden, covered-in concern used to carry our old granddad and even our superior selves safely over.

All this is intended as a prelude to the thought that, though silage and alfalfa are most admirable foods for live stock, there are still virtues in roots. Change of diet is as necessary for the beasts of the field as for us humans; and though turnips, mangels, beets, and the like, seem but poor stuff compared with alfalfa, when viewed by the light of chemical analysis, yet when put before cows or sheep they will often leave the former to indulge in a perfect debauch on the roots.

A Health Food for Live Stock

A curious thing about it, too, is that this change to the apparently less nutritious diet will frequently result in a marked improvement in the animal's health and appetite and consequently in the rapidity of ripening.

The following table gives the results of the above analysis above referred to. It is taken from the United States Department of Agriculture's "Analyses of the Composition of Food-Substances."

A study of this table would serve to show that sheep are not scientific judges of the feeding value of the good things provided for them, but nature has built them that way, so the best we can do is to grow a few roots for them, since they seem to regard them as a sort of succulent confection. A

Feeding Stuff	Water	Ash	Protein	Fiber	Nitrogen Free Extract	Fat
Alfalfa at different stages (average) ...	71.8	2.7	4.8	7.4	12.3	1
Turnips (average) ...	90.6	.8	1.3	1.2	5.9	.2
Rutabagas ...	88.6	1.2	1.2	1.3	7.5	.2
Mangels ...	91.2	1	1.4	.8	5.4	.2
Sugar-beets ...	86.7	.8	1.5	.9	9.9	.1
Red Beets ...	88.5	1	1.5	.9	8	.1
Carrots ...	88.6	1	1.1	1.3	7.6	.4

couple of acres will be enough for a few cattle and a nice little flock of sheep. They are easily grown and very productive.

Milking-Machines in Arizona

[CONTINUED FROM PAGE 4]

tortured by the operation. If one can judge by the placid way these cows chewed their cud and the fact that not one of them showed the faintest trace of discontent or uneasiness, this objection is utterly unfounded. Mr. Davisson stated that he had had two or three cases where the teats had been badly cut by fence-wire, and he was able to remove the milk with the machine where it would have been an utter impossibility to do so by hand.

The Cows Suffered no Discomfort

5. Condition of the Teats—The writer examined the teats of every cow before the milking was begun, immediately after the cups were removed and again at the end of an hour and could find not the slightest trace of soreness or abrasion.

As to the vital points of prime cost and maintenance. Mr. Davisson produced the following figures:

Total cost of engine, tank, gages, piping and milking attachments installed, \$700.

Gasolene per month (at 25½ cents per gallon), \$6.50 to \$7. The same engine runs the separator and does considerable water-pumping. About \$5 per month would represent milking cost.

The depreciation on this milking outfit is hard to estimate, as it is but three years old. The engine is good for twenty years more; the piping, tank and gages will last indefinitely, and the milking apparatus proper has, as yet, shown no need of repairs other than washer renewals. On the basis of its lasting seven years there would be a depreciation charge of less than \$30 per year on the entire plant.

What it Costs to Milk Cows by Machinery

Notice the economy of operation. One man milks thirty-two cows in an hour. He would require from three to four hours to do it by hand. Looking at it another way he will milk one hundred cows in the same time he milks thirty by hand. Last year's repairs were exactly \$4.15, and the year before, \$4.80.

Tabulated, the annual charges are thus:

Interest on investment, @ 7%.....\$49
Annual repairs..... 5
Annual depreciation..... 30
Gasolene, at \$5 per month..... 60

Total\$144

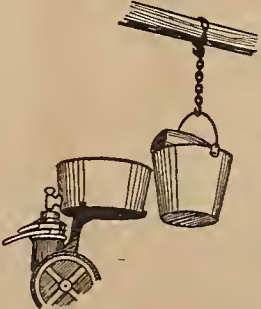
To which must be added three hours per day of labor.

A final word as to the cleansing of the apparatus after use. The milker is attached to a convenient outlet, and the cups plunged into a tank of cold water. After this is sucked through, scalding water is substituted and sucked through the apparatus. Then the receiving-pails are thoroughly scalded and rinsed. The cups and the rubber tubing are placed in weak brine, where they remain till the next milking. This entire operation takes about fifteen minutes.

All in all, this inspection thoroughly convinced the writer of the practicability, cheapness, cleanliness and efficiency of the machines. Add to this that the engine is available for other uses, and it would seem a good investment for any careful and mechanically inclined dairyman with fifteen cows or over.

For the Separator-Room

By Mrs. H. D. Krabill



only ask you to examine and try the "Ranger" without a cent of expense to yourself before you think of buying any other bicycle.

WE HAVE a home-made contrivance to use in our separator-room which we think a great muscle-saver. It is a chain suspended from the rafter, with an iron hook on the end to hold the strainer full of milk, so that no weight rests on one's arms. A child can tip the strainer slightly and strain the milk into the separator supply-can.



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Have puncture-proof tires, imported Brampton roller chains, imported English flanged sprockets, English featherweight steel mud guards, imported Brampton pedals, motor style saddles, bars and grips, and other distinctive features possessed by no other bicycle. No effort or expense has been spared to make the 1913 "Ranger" the World's Best Bicycle. Improved factory methods and greatly increased output for 1913 enable us to make a marvelous new price offer. Something very special to the first purchasers of 1913 Models in each town. Write us about it today.

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is allowed on every "Ranger" bicycle. Not a cent cost to you if you do not wish to keep it after riding it for 10 days and putting it to every test. Our "Ranger" bicycles are of such high quality, however, that we are willing to ship to you, prepaid, let you examine and try it and leave it entirely to you whether you wish to keep it or not.

LOW FACTORY PRICES Our great output, perfected methods and machinery enable us to offer you direct from the factory the best bicycle ever produced at a price that will be a revelation to you. Do not buy a Bicycle or a pair of Tires until you receive our large, complete catalog and learn our direct factory price and remarkable special offer.

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The Market Outlook

Market Prospects in Mutton and Wool

By John P. Ross

THE present month opened up with a somewhat heavy feeling in the meat-market generally. On the last Monday in April 30,000 cattle, 58,000 hogs and 26,000 sheep were on hand in the Chicago stock-yards; and it began to look as if the owners of meat animals of all kinds had conspired to knock the bottom out of the market. Cattle went down from thirty-five to sixty-five cents and hogs from fifteen to twenty-five cents from the prices of a week back. Sheep and lambs of course suffered some decline, but nothing in proportion to these, and in a few days a reaction to former prices proved that it was the huge shipments that were responsible for the temporary decline. The prevalence of shorn offerings showed that the shearers were already busy.

Though reductions in the wool tariff are regarded as certain, and its entire removal quite possible, what will actually be done with it is at present writing only a matter of guess-work. It is claimed that already prices are shaded from ten to fifteen per cent., but actual transactions on that basis are hard to find, and holders seem determined to hang on to what they have, since there is but little wool in the hands of manufacturers, while the demands of their trade are pressing.

A Small Wool-Clip This Year

Unless the universal law of supply and demand is in some mysterious way abrogated, there is very little probability that for a considerable period our wool-growers will be seriously affected by any tariff changes that may be made; and any rush to realize is improbable.

Reliable accounts from every wool-producing country are to the effect that the demand is increasing in all lines of woolen goods, while the supply of wool on hand is nearly exhausted; and that this season's

clip, though of extra good quality, will be the smallest known for some years past.

The causes for this are various. In all the great sheep-raising British colonies and in South America, as well as in our own country, great ranges of pasture, which have been devoted to the raising of cattle and sheep, are being rapidly enclosed and converted into farms. And until we clearly understand that the fertility of the soil cannot be maintained unless we rear an adequate amount of live stock, and that most of our crops pay better when fed than when carried away in bulk, the demand of both meat and wool is pretty certain to exceed the supply.

This conversion into farms of wide ranges that have afforded free pasturage for horses, cattle and sheep for ages past has extended to Russia and to many parts of Asia, so that the Tartar and other nomadic races are turning their shepherd's crooks into plow-shares, and the "shepherds who watched their flocks by night" are to be altogether a mere tradition.

Droughts Have Caused the Live-Stock Business to Suffer

Abnormal weather conditions, too, have had much to do during the past two years with reducing the numbers of domestic animals. In England a year of drought has been succeeded by one of cold and heavy rains. The drought in Australia is estimated to have reduced the value of the wool crop of 1912 by \$1,000,000, and of the sheep stock by \$6,000,000; this season's clip is said to be short 300,000 bales.

Reports from New Zealand, Africa and South America are much to the same effect, though not to quite so great an extent.

Meanwhile the use of wool in most lines of clothing is extending greatly, and if the time should ever come when governments legislate as freely against misrepresentations as to our garments as they are already doing as to our food and drugs, the really, truly "all wool" declaration of the astute clothing salesman will cease to be, as it now usually is, "the baseless fabric of a vision."

These then are a few of the reasons why we can better endure whatever changes our legislative solons may see fit to introduce; and we still have our mutton to fall back on.

Hampshire Downs

By J. P. Ross

THE sheep in the picture are Hampshire Downs of American breeding, and they are fit to compete with anything coming from over the water. Just look at the



American-bred Hampshire Downs

character of the head, the line of the back, the loin, the leg of mutton, the fleece of the one in front, and the general makeup and adherence to type of both of them. I think the most acute critic would be satisfied that we have "got there" at least in this breed.

Two of the strong points in the Hampshires are their remarkable fecundity and their motherly virtues. An English journal reports, as an instance of this, that during the present lambing ten ewes out of a small thoroughbred flock produced thirty-one lambs; nine of them had triplets, and the tenth "went them one better," producing a quartet. All are reported as doing well. This is largely owing to the perfect fitness to which expert shepherds bring their ewes at mating-time.

Selling Flowers and Ferns

By Mrs. Clara Griffith

LAST summer we planted one-half ounce of nasturtium-seed, all colors. We gathered eight to ten bunches twice a week and sold them readily at five cents per bunch to people who would notice them as we were driving along the streets. We have often had business men take two and three bunches at a time.

Another thing we found pleasant as well as profitable was gathering ferns. We would

cut the stems as long as possible, and tie fifty in a bunch. The florist gave us one dollar per thousand; he took from four to six thousand every week.

We would also dig some of the prettiest plants, put them in strawberry-boxes with some damp soil around them, and people were glad to get them at twenty-five cents each.

We also sold peppermint and spearmint just as they were coming into bloom.

We sell our flowers in a town of 22,000 inhabitants four miles from our farm. We take the flowers, ferns and herbs twice a week, Tuesdays and Saturdays, when we take the butter, eggs and other produce.

A Drop in the Hog-Market

By L. K. Brown

THERE suddenly appeared out of a clear sky and without expectation a heavy liquidation of cattle. The feeders apparently became alarmed over the tariff revision and feared a drop in the market, so piled the cattle in and completely flooded the market.

There was a similar movement in hogs, but on a much smaller scale. With the big break in cattle prices, hog prices declined also, bringing the market down to the February level. It was merely a lack of confidence of the cattle-feeders, and they stampeded.

The Recovery of the Market Has Been Slow

A lull after seeding and before corn-planting gave many an opportunity to market hogs, and this, together with the hogs from the cattle-feeders' yards, made up the increase in the hog receipts.

Eastern demand has declined somewhat, but revived partially on slumps, thus counterbalancing to a limited degree any radical price movements. Since the drop, prices have been slowly working upward, but the receipts are too large and the hogs too heavy to allow a quick return.

Fall Pigs are Becoming Popular

Recent weather has been favorable for the little pigs, and much of the supply of corn now being held by growers, which the elevator men are expecting to be marketed before long, will never reach the elevators, but will be held and fed to the shoats. It is quite probable that a good percentage of the sows will be held for fall litters and so will not appear on the summer market. The custom of growing fall pigs is increasing, and at present the country is very energetic in stocking up heavily with swine.

Armour's Chicago buyer believes there will be but little change in the market during the next few weeks. He is of the opinion that the packers' supply of meats is too scant, the demand too persistent and the supply of live hogs too small to lower prices.

The tariff agitation is causing a great deal of uneasiness among stockholders, but it appears that should meat be put on the free list there would be but little change. The cost of importing meats would make them as expensive as the domestic product.

The corn belt of the Mississippi Valley and possibly Denmark are the only developed regions in the world which do not buy pork, so that the placing of pork on the free list is of little consequence. We never have and doubtless never will import pork in any quantity. The tariff question is causing more anxiety than it deserves.

Timothy with a Taste

[CONTINUED FROM PAGE 5]

proper aroma. This grade, however, cannot be made after the seeds have passed the milk stage, and for the best quality must be cut immediately after the bloom is shed.

Eastern farmers growing hay for market as a rule find it profitable to make hay that will grade choice.

On the basis for \$15 for choice timothy, the other grades would sell at something like the following:

TIMOTHY—Choice, \$15; No. 1, \$14; No. 2, \$11 to \$13; No. 3, \$9 to \$10; no grade, \$6 to \$7.

RED CLOVER—No. 1, \$12 to \$13; No. 2, \$11 to \$12; No. 3, \$7 to \$9; no grade, \$5 to \$6.

MIXED CLOVER—No. 1, \$11 to \$13; No. 2, \$10 to \$11; No. 3, \$8 to \$9.

ALFALFA—Choice pea-green, \$16; No. 1, \$14 to \$15; No. 2, \$12 to \$13; No. 3, \$10 to \$11.

Many hay-growers have been deterred from making this grade of hay, notwithstanding the higher price it commands, because of the increased difficulty in curing it, and particularly because of the conviction that they get so much smaller yields and, incidentally, because of the effect this early cutting has upon the permanency of the stand. Our experiments show that in the matter of yield there is no sacrifice, but on the contrary there is a gain, in comparison with either an earlier or a later period.

SHARPLES MECHANICAL MILKER

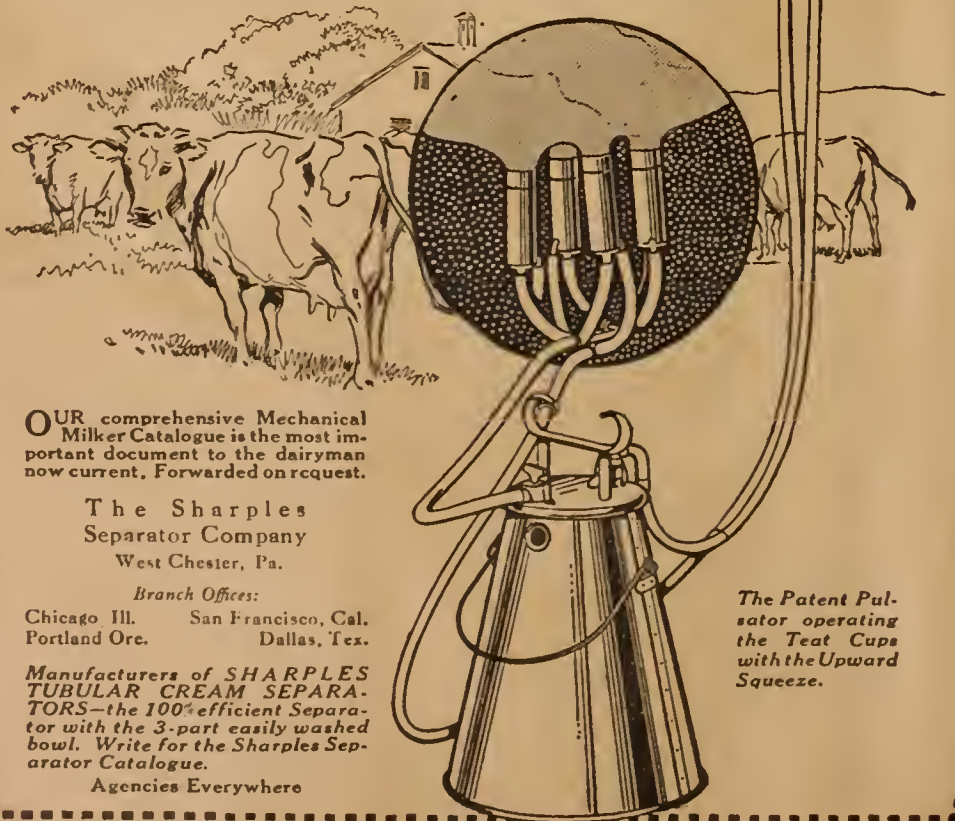
THIS equipment is revolutionizing modern dairy operation. During the four years since its perfection it has been installed with unqualified success in hundreds of the leading dairies throughout America and abroad.

The distinctive features of the SHARPLES MILKER, to which its complete success is due, are the Teat Cups with the Upward Squeeze and the Patent Pulsator operating them. This device reproduces nature's own method of milk extraction, which the most skillful hand-milking cannot do.

The cows are more contented. The teats and udder become far better conditioned. The milk product is absolutely uncontaminated—pure and more valuable. Labor cut to one third.

Sharples Mechanical Milking means
the end of all drudgery of milking.

Practically every dairyman can visit installations of SHARPLES MILKERS within easy distance, where the actual operation of this equipment can be observed under conditions approximating his own. We shall be pleased to hear from dairymen with a view to their making such inspections.



OUR comprehensive Mechanical Milker Catalogue is the most important document to the dairyman now current. Forwarded on request.

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TUBULAR CREAM SEPARATORS—the 100% efficient Separator with the 3-part easily washed bowl. Write for the Sharples Separator Catalogue.

Agencies Everywhere

The Patent Pulsator operating the Teat Cups with the Upward Squeeze.

There is just as much reason for putting the poultry in the fattening-pen and finishing them for market as there is in putting a hog on full feed before offering him for sale

The Pride of the Armstrongs

By Grace Boteler Sanders

With an Illustration by R. Emmet Owen

SILAS ARMSTRONG looked up dazedly when a big red machine emerged from the cloud of dust which had hidden it from view and glided up to the wicket gate close to where he was sitting. He blinked uncertainly when the sun glittered upon the nicked trimmings and shining glass, almost shutting out his sight with their glare.

"What on earth!" he ejaculated, stiffly rising and hobbling to the gate. "What on earth!"

Silas Junior, the young man who was driving the splendid machine, laughed triumphantly as he called out: "I got the prize, Gran'dad. Didn't I tell you I'd win?" The old man still gazed wonderingly as the boy continued, "I got the most subscribers, according to the population, of any agent in the United States, and the auto is mine. What do you think of her?"

The old man dreamily opened the gate and tottered out to inspect the great machine which was throbbing and trembling all over because of the pulsations of the powerful engine.

"Landy, but she's a high-strung critter," he declared in a tense whisper. "I'd be afraid to drive her, son."

Young Silas laughed gaily. "You'd 'a' been afraid to try for the prize too, but I ventured, and I have something worth while that I couldn't have bought. Dad wouldn't get me a horse and buggy, though all the kids in the neighborhood owned buggies. I had either to go on foot or take the old cart. It was a measly shame too."

"Your father's a good man. He'd 'a' bought you a kerridge if he'd had the money handy," loyally defended the old man.

"I know he would," declared the boy just as warmly. "He's one of the best fathers in the world, but intentions don't count these days. A fellow must put up the goods if he wants to make a show. I've learned that much."

The old man wagged his head so vigorously that every crinkly hair of his snowy beard waved in unison with its owner's sentiments. "I know it!" he sighed sinking down on the grassy hillock. "And, boy, it's allus been that way, in the old days the same as now. I reckon if, instead of going to war and getting my leg shot off, I'd stayed at home an' speculated like Ron Williams over there—the old man nodded toward a great red barn which spread its hospitable arms far to the east, and whose shining spire pierced the heavens—"if I'd stayed at home like Ron and sold wool and beef and calico I'd 'a' had a few pennies to set my boys up in life."

"He brags that he paid for three substitutes and thinks that he done something big, but he made enough money in that time to found his fortune. I went to the front, me and your Uncle Luther. I came home crippled for life. Luther breathed his last on a southern battle-field. Your grandmother grieved herself most to death because we couldn't give his bones a Christian burial."

"I've been poor ever since, and my boys have been poor. It's mighty unhandy, but"—the old soldier reared his silvered head proudly—"there's never been a coward among the Armstrongs. We're the stuff of which heroes are made, Silas, my boy. That's the reason you beat all the other fellers in this contest. When you thought you was licked you buckled on your belt and started all over again. The Armstrongs succeeded in everything except this money deal, and why we failed on that I can't exactly tell. We allus worked like dogs."

The old man, leaning upon his cane, relapsed into a moody silence. Only the purring of the big machine cut the perfumed air. The fragrance of hundreds of vials of the sweetness of lilies and roses and lilacs had been spilled over the laughing countryside. Each breeze brought the whispering of violets and the promise of half-open hyacinth-buds, but neither the young man nor the old were thinking of these things.

The old man saw, amid the smoke and blood of carnage, a southern battle-field, where an army of brothers were fighting against each other; he saw his own boy fighting bravely as he fell. The young man saw not the bowed old cripple, but a hero who had given his all for his country.

"We're proud of you, Grandfather, just as proud as can be!" he said very softly, but with an earnestness in his tone and a fire in his dark eyes which spoke the depth of his feeling. "A man like you is an honor to the country; a big puff-ball like Ron Williams is not. Is the nation celebrating because of men like him?"

The old man cackled merrily at the idea. His face shone, and his faded eyes gleamed. Almost as quickly a shadow replaced the sunshine which illuminated his face, and he pulled his offending beard viciously.

"That's true enough," he complained, "but what good'll the honor do me if I can't even go to the cele-

bration. Here they're going to have a reunion of the 57th Regiment at Springfield to-morrow. For months I've been thinking about meeting the boys I haven't seen for so long, and I thought how I'd order 'em around like I used to. I was captain, boy. I'd cleaned up my uniform and polished my sword and went over what I'd do about a hundred times. But last night—the old man paused brokenly—"last night your Uncle Tom said—you could 'a' knocked me down with a feather—that he wasn't going."

"What!" interrupted the young man in astonishment.

"No, sir, he said the wet weather had put him back with his plowing and one of the hosses died and he couldn't spare time nor nags. That means for me to stay at home, for an old feller eighty years old can't walk twenty miles and take part in a celebration too. I reckon you'll be there."

The old man's face suddenly brightened as he turned eagerly to his grandson. "Your machine come just in the right time. Nobody can object to taking it to a celebration."

"You're right!" laughed young Silas, laying his hand caressingly on the shining wheel. "I would have been obliged to stay at home otherwise, for Daddy's using the horses too."

"I reckon your mother and the children'll fill it!" ventured the old man, mentally calculating how many persons the roomy seats would hold. The boy flicked a bit of dust from the shining side and awkwardly mopped his hot forehead.

"They are not going!" he explained lamely. "The fact is, Grandfather, I'm going to take a dozen boys who have been very good to me. I never had a chance before to return any of the favors they gave me, but I'm going to take them to Springfield. We expect to ride in the procession and afterward have supper at the hotel. I deserve a little fun after my hard times."

"There's just twelve of the boys around here who want to go to the reunion and can't," remarked Grand-

The boys were there lounging by the door. Silas saw them as he whirled around the corner and proudly swept up to the door. He was met by mingled expressions of envy and pleasure, by much veiled sarcasm and jealousy. His spirits dropped immediately. The fall was complete when he asked casually: "I suppose you'll be ready for the celebration in the mornin'?"

George Westcott yawned politely under his gloved hand. "I suppose so," he drawled indifferently; "these celebrations are such a bore." Immediately Young Silas saw not these well-dressed indifferent youths, but twelve bowed old men in suits of soldier blue, twelve old heroes who longed to hear once more the crack of the last salute over a comrade's grave. Could he retrench now? His very heart stood still at the thought of the sneers and snubs which he would receive, for he knew that in spite of their assumed indifference the boys were anxious for the trip. Could he? Grandfather's words answered him. "There had never been an Armstrong who was a coward!" With a toss of the head and a squaring of his broad shoulders, Silas broached the subject.

"I'm glad you don't care for the celebration," he said nonchalantly, "for I've concluded to ask you to wait until some other day so I can take a different party."

A low whistle and a circle of wooden-faced boys greeted this announcement, but the young man plunged bravely on. "There's a dozen old soldiers who are crazy to be at the reunion, but who have no way to get there, so I concluded to release you that I may take them."

Without a word the boys turned and walked away. Silas waited. When at the end of five minutes they did not return he rolled swiftly down the street. He did not stop until twelve doleful old men had been changed into twelve happy soldiers who were rapturously fussing over their faded uniforms which they were to wear on the morrow.

The sun was shining brightly in a rose-and-amber sky when the auto and its laughing load thundered over



Grandfather had been the only one who had the presence of mind to snatch her from the way of harm

father slowly. "Seems like I'd be willin' to give the rest of my life to march with the boys once more."

And somehow, as young Silas drove away through the summer twilight, a haunting picture of his aged grandfather possessed him. As he swept over the bridge the plaintive words rang louder in his ears than the croaking of the frogs in the marsh. The moon which had arisen in the clear sky shone solemnly down upon the little country graveyard where so many of the boys in blue who had already answered to the reveille lay sleeping peacefully. How rapidly the ranks were thinning. Each year when the war-scarred veterans marched behind the tattered flag on Decoration Day the townspeople remarked because of the few that were left, and as Silas flew along the smooth country road, his hand upon the wheel of the new machine, a great pity overwhelmed him.

"If I hadn't promised to take the boys," he muttered; "but I think I'm entitled to a little fun, especially when I earned the car myself." He relapsed into a moody silence, for the flying machine had lost its charm.

"If I hadn't invited the boys I'd take every one of the poor old edgers," he repeated as he drove into town; "but I can't go back on the invitation now. They'd all give me the laugh. I guess I'll go around to the jewelry-store and see George—exhibit my machine too."

The romantic little story was upon every lip for many a day thereafter. They told how the governor's little daughter had suddenly spied her father and had dashed across the street, right under the feet of a spirited horse. Although there were many young men near, Grandfather had been the only one who had the presence of mind to snatch her from the way of harm. It was a most eventful day. For pure happiness young Silas was almost too nervous to sleep that night, but the next day, when the governor and his staff had come and gone, leaving a substantial reward in the old man's hand, he sought his grandfather almost reverently.

"Even the boys, and they were a little miffed because I gave them the go-by yesterday, are talking about you, Gran'dad," he said shyly. "They came up and congratulated me. It is worth something to be a hero."

Grandfather smiled and stroked his sword complacently. "If you hadn't fought and won your battle of self-sacrifice, the old man wouldn't have had the chance to be a hero," he said softly. "Are you sorry?"

Young Silas vigorously shook his curly head. "I'm glad!" he declared. "What you told me helped me to win and will this whole world through. It's a great thing to remember that no Armstrong ever failed in battle. I'll try to be a worthy member of a worthy race."

Better Babies on the Farm

By Anna Steese Richardson

BETTER crops + better live stock + better babies = prosperity.

There you have it—the new slogan at agricultural fairs the country over!

County and state fairs are responsible for the friendly competition which has raised the standard of grain and live stock. They have educated the farmer to secure the best possible returns from the soil and from animal-breeding. And now the fair officials are going to prove that even greater prosperity for the farmer can be insured by—Better Babies on the farm.

For a generation or two farmers have felt that their babies were not exactly toeing the mark. There they were, living the outdoor life, breathing the finest sort of ozone, drinking the richest sort of milk and eating the freshest of fresh eggs, but not turning out in just the way a self-respecting farmer's baby should. Some of them actually died during the process of teething exactly like the huddled mites of the city tenements. Others grew up with an aversion for farm life or they lacked strength to perform farm work. These children found their way to the cities, leaving their parents to the mercy of hired hands. The farms which they should have upbuilt and inherited have drifted into alien ownership.

It Begins with the Mothers

Just such conditions started the cry of "Back to the soil." Granges began to study the problem of keeping the farmer's children on the farm. Armies of strawberry and corn boys and of tomato girls were organized. Agricultural high schools were established. But results were not all that had been anticipated. Men and women began to realize that you must go farther back than growing boys and girls; to babies; yes, to babies yet unborn. The making of the true child of the soil must start with pre-natal existence—with the mother!

This idea finally took definite form in the mind of a woman who had borne children and who loved both women and babies. She had been a state fair worker for years, keeping step with the march of progress in the woman's pavilion. She had helped to award prizes for good bread, good pieced quilts, good painted plaques. When child welfare was brought to her attention, she began to consider the importance of well-born, well-cared-for children. And as she watched the women and children at the state fair where she acted as judge she decided that light, savory bread, intricate quilting patterns, gorgeously painted china, yes, even grain, hogs and cattle, would not spell Prosperity with a capital P for the farmer unless his children were sturdy and strong, to take up the work when he was ready to lay it down.

But how was the standard of baby-health on the farm to be raised?

Good Cattle—and Poor Babies

If crops, horses, cattle and chickens could thrive on farms, why not babies?

Splendid idea! She would discuss the question with men who had brought grains and live stock up to the highest possible standard. So away she went to the live-stock exhibit, where the judges and farmers hung over the railings, pointing out the good points of prize-winners—horses, cattle, hogs and chickens. What sleek, well-fed, carefully tended mares, cows, sows and hens these farmers had on display! What promising colts, calves, tiny porkers and chicks these well-tended animal mothers had borne!

The woman who loved babies stopped stock-still, gasping. The answer to her question was written clearly all over that live-stock exhibit. Care in breeding, care of the mothers, care for the newly born animals, the future prize-winners, but little or no care for the babies who, as farmers saw them, would never become prize-winners, never bring a dollar into the family exchequer. Millions for improved methods of farming, for better live stock, but not one cent for better babies!

So why not a contest for babies with cash prizes for the winners?

Why not prove that babies could respond to care, as well as colts, calves and piggies? Why not let the farmer show that he could raise the standard of future farmers as well as future products of the farm?

This woman knew the keenness of the farmer to catch an idea, the quick workings of his practical mind, once open to conviction. In that hour the idea of the Better Babies Contest was born. The next year the first state-fair contest was held, and it drove its lesson straight home.

The First Better Babies Contest

Babies from both farms and city homes were entered. A city baby won first prize. The standard of city babies was found on the whole to be higher than that of country babies. Farmers who had won prize after prize for grain, horses and hogs saw their own children disqualified by judges, physicians who know a healthy baby when they see it!

Can you imagine how those farmers felt?

They were the angriest set of men that ever surged out of the state fair-grounds. And every one of them carried a paternal chip on his shoulder. He'd show those city fathers what was what the next year!

One of them did. He went at his task of baby-culture in a most thorough way, the same way that had brought him blue ribbon after blue ribbon in the agricultural and live-stock exhibits. He took wife and baby to the best physician in the state capital. He studied his child's score-card as he studied the pedigree of his finest stock. He gave his child as careful attention as for years he had been giving his crops and his stock. He co-operated with his wife in working out a system of simple physical-culture exercises for the two-year-old child. He saw that it was fed on the best the farm afforded, instead of sending the best to market.

And at the next fair that very baby took first honors in the Better Babies Contest—blue ribbon, cash and a splendid score-card which was printed in big type in the daily papers. Talk about proud farmers! Here was a



"one-year crop" that was a record-breaker. A better baby, a "best" baby, as the result of just one year's scientific attention.

Do you wonder that the Better Babies movement is sweeping the agricultural districts and the state fairs? Do you understand why the "back-to-the-soil" idea is at last on a practical working basis? There won't be any need of city folks going back to the farms. The farmers' children will be strong enough, keen enough, earnest enough, to hold their inheritance against all comers, when these Better Babies lay hand on the plow and the reaper. Better Babies mean more than mere prosperity. They mean an aristocracy for farmers, the aristocracy of good blood, strong bodies, clear brains.

Naturally city babies are not barred from these Better Babies Contests, for the average state fair is held in a state capital or a city of considerable size, making the competition between city and rural babies extremely keen. But the entire idea of the contest appeals more strongly to the farmer and his wife who have tested in a practical way all the modern methods of raising standards in live stock. For, after all, a dimpled, cooing baby is merely a wee animal and will respond to exactly the same methods of health-culture that turn colts, calves and pigs into prize-winning live stock.

How to Enter the Contests

The Better Babies Contests are announced in state fair bulletins and premium-lists precisely like any other fair features.

Parents who desire to enter their babies send for application blanks. These are found to contain about twenty questions concerning the family and individual history of the child and its general health. If the answers filled in by the parents prove that the child is qualified to enter, the committee notifies them when and where the child is to be presented for what is known as the elimination contest, which is held several weeks before the final contest on the state fair-grounds. Elimination contests are held at county-seats where ten or more children are gathered together. The physical examinations are conducted by physicians on lines laid down and standards of child health furnished by the state-fair committee on Better Babies Contests. Any child passing this examination successfully is eligible to enter the final contest at the state fair.

These score-cards and health standards for babies present an interesting study to the farmer and his wife, as they parallel the tests applied to blooded animals entered for live-stock prizes. They have been prepared by physicians and psychologists who have had practical experience with contests and by specialists in the diseases of children. The questions cover height, weight, circumference of chest and abdomen, symmetry, quality of skin and fat, muscular development, condition of scalp, teeth and throat, every point on the anatomy of the would-be prize-winner in which weakness or disease might lurk.

All examinations, both elimination and final, are made on scientific lines, and with all possible respect for the dignity of the parents and the safety and comfort of the child. Best results are secured when only the examining physician, his clerk or assistant, the mother and the baby are present. The babies are not on exhibition during the examinations, but generally appear before the admiring eyes of the public on the day when awards are made. This ceremony is performed in the Better Babies Contest pavilion, the woman's pavilion or the arena.

After the final contest, score-cards are sent to parents, and generally these carry suggestions for improving the baby's health during the ensuing year, offering hopes of prize-winning at the next fair. Examining physicians have been most enthusiastic about the contests and generous in their advice to parents. But the great value of the contest lies in the opportunity given parents to see a scientific, honest comparison between children of the same age and to all purposes the same environment and opportunities for physical development. Here may be studied the effects of different methods of feeding, of sleeping, of outdoor life, of habits.

While the contests are in progress during state-fair week, there is generally held on the grounds a child-welfare exhibit, arranged by some organization of progressive women, showing modern appliances for sterilizing milk and preparing artificial food; demonstrations of comfortable clothing for babies and sanitary toys; lectures on the conservation of child life and general child-welfare, sanitation, hygiene and recreation. Every influence that can bring the children of the farm up to the very highest human standard is discussed in these gatherings.

You Ought to See Those Babies at the Fairs!

State fair-grounds on the day of Better Babies prize awards present a sight not to be forgotten. The healthy baby is generally the handsome baby and the good

baby, so this sort of exhibition of youngsters far surpasses the ordinary "beauty show." It appeals to many parents who would not enter a baby in the beauty show, and it brings out the cream of rural and city babies. There is nothing more inspiring than the faces of fathers and mothers listening eagerly to speakers on baby health, baby hopes. Here is a topic every parent can understand, placed on a basis that appeals to the father as sane and practical. If your baby is plain, it is forever outclassed in beauty shows, but in Better Babies Contests there is always the next year's fair to anticipate and work for, bringing baby up to the health standard by means of simple, hygienic living.

Louisiana was the first State to hold a Better Babies Contest at a state fair. This was in 1909, when the Louisiana Congress of Mothers opened their model home on the state fair-grounds at Shreveport for the physical examinations and awarding of prizes. The judges were physicians, registered nurses and kindergarten teachers. The contest drew parents of all classes, city and rural, and was repeated the next year with great success.

Mrs. Frank De Garmo, who had worked out the general plan with southern physicians, carried her idea to the National Congress of Mothers at Denver in 1910, and the idea began to spread. Mrs. Mary T. Watts of Audubon, Iowa, brought it to the attention of the Iowa state-fair officials, and the contests have been scientifically and popularly successful at Des Moines for two years. Preparations for a much larger contest are now under way for the state fair of 1913.

Fifteen States This Year

Far out in Oregon, O. M. Plummer, secretary of the Portland Union Stock Yards Company and an active worker for state fairs, had read about the Louisiana and Iowa experiment, and he interested the Oregon state-fair officials in the movement. The 1912 contest brought out hundreds of babies and convinced physicians and farmers that here was a practical way to raise the standard of children in that splendid western climate. Mr. Plummer went to Denver in January of this year, saw more fine results of the contest held at the National Western Stock Show, and returned to Oregon a Better Babies enthusiast. He induced the state-fair officials to offer bigger prizes for the 1913 contest at Salem, Oregon, and to provide better quarters for babies and their guardians. The board voted one thousand dollars for this year's contest, the largest sum ever set aside for the work.

Missouri held a contest at the state fair last year and will hold another one this year. Oklahoma state-fair officials have co-operated with women's organizations and will hold their first Better Babies Contest this September. Nebraska, Montana, Minnesota, Washington and Mississippi fair officials have definitely decided to hold Better Babies Contests this year, while Idaho, Arizona, New Jersey, Illinois, Kentucky, Vermont and North Carolina have the matter under advisement and will probably have contests if appropriations can be secured and the women's organizations induced to co-operate.

The Woman's Home Companion Prize Offers

The co-operation of women's societies like the Mothers' Congress, federated clubs and child-welfare associations is extremely important, not only because the allied women understand organizing a movement of this sort and serving on committees, but also because in all States where a woman's organization works with the fair association and contributes one hundred dollars in prize-money, the publishers of the WOMAN'S HOME COMPANION add the following prize offer:

A prize of One Hundred Dollars in Gold will be awarded to the winner of the first prize in the city class, and another prize of One Hundred Dollars to the winner of the first prize in the rural class. Of these two prize-winners the one with the highest score will receive a handsome gold medal suitably inscribed. The other will receive a silver medal. Two bronze medals will also be awarded: one to the second highest city baby, and the other to the second highest rural baby. To each of these four prize-winners a handsome certificate appropriately framed will be presented. All these prizes are to be known as WOMAN'S HOME COMPANION Better Babies Prizes.

The National Western Live-Stock Show held in Denver in January of this year captured the first of the special prizes, two rural babies, Hazel Lucile Cash of Edgewater and Ralph Gullett of Golden, winning one hundred dollars in gold each. Hazel Cash's score was 97.85; Ralph Gullett's was 96.70. Both were splendid specimens of children raised in the open.

Write and Find Out

Oklahoma was the second State to qualify for the special WOMAN'S HOME COMPANION prizes, which will be awarded in the Better Babies Contest at the state fair to be held this September. Both Oregon and Iowa women are organizing to raise the necessary hundred dollars and thus insure the COMPANION prizes.

The Better Babies Editorial Committee of the WOMAN'S HOME COMPANION has also prepared some extremely interesting literature for free distribution. This outfit includes comprehensive and specific instructions for organizing and holding a Better Babies Contest, score-cards, forms for application blanks, notification cards, history cards, suggestions for parents who desire to prepare their children for contests and wall charts for the use of judges. State-fair officials and women's organizations now considering the advisability of holding Better Babies Contests can secure full information concerning prizes, score-cards, etc., by addressing The Better Babies Editor, WOMAN'S HOME COMPANION, 381 Fourth Avenue, New York City.

This is the moment to organize a contest. State-fair directors are preparing the bulletins and premium-lists, and there is just time to start a movement in favor of the Better Babies Contest in your State.

"LIKE MAGIC"

New Food Makes Wonderful Changes

When a man has suffered from dyspepsia so many years that he can't remember when he had a natural appetite, and then hits on a way out of trouble he may be excused for saying "it acts like magic."

When it is a simple, wholesome food instead of any one of a large number of so called remedies in the form of drugs, he is more than ever likely to feel as though a sort of miracle has been performed.

A Chicago man, in the delight of restored digestion, puts it in this way:

"Like magic, fittingly describes the manner in which Grape-Nuts relieved me of poor digestion, coated tongue and loss of appetite, of many years' standing."

"I tried about every medicine that was recommended to me, without relief. Then I tried Grape-Nuts on the suggestion of a friend. By the time I had finished the fourth package, my stomach was all right, and for the past two months I have been eating with a relish anything set before me. That is something I had been unable to do previously for years."

"I am stronger than ever and I consider the effects of Grape-Nuts on a weak stomach as something really wonderful. It builds up the entire body as well as the brain and nerves." Name given by the Postum Co., Battle Creek, Mich.

"There's a reason," and it is explained in the little book, "The Road to Wellville," in pkgs.

Ever read the above letter? A new one appears from time to time. They are genuine, true, and full of human interest.

Make More Money Out Of Your Fruits and Vegetables

Don't let your surplus fruits and vegetables go to waste. Can them, the same as a large canning factory. Small investment, big profits. Easy to build up a profitable business of your own, on the farm with STAHL.

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Buy direct from factory and get a better stove for less money. Freight prepaid—stove comes all polished, ready to set up. Use it one year—if you aren't satisfied we refund your money.

Write for Catalog and Prices. Big Free Catalog shows why improved features of Gold Coin Stoves make them fuel-savers and splendid bakers—why they have given satisfaction for 53 years.

Gold Coin Stove Co., 8 Oak St., Troy, N. Y.

Crocheted Laces for Many Uses

With Directions by Evaline Holbrook

THE laces illustrated on this page are not offered for any special use, but rather to supply needlewomen with pretty, easily made patterns that can be selected for various purposes, and may be coarse or fine, as the worker chooses.

A Useful Medallion is begun with seven chain stitches and joined in a ring.

First Round—Fifteen single crochet in the ring. Join last stitch to first.

Second Round—Chain three and make two double crochet in each stitch of preceding round, picking up on the back thread. Join the round.

Third Round—One single crochet each in the first three stitches, again picking up on the back thread. Chain five and catch in the last single crochet made, for a picot. Repeat from the beginning to the end of the round, join, and fasten off. The wheels should be joined as desired, on the picots of the edges.

Pillow-Case and Towel Lace—Use No. 60 or No. 70 crochet-cotton, and begin with twenty-one chain stitches.

First Row—Turn and make one double crochet in the fourth chain from the needle. *Chain two, skip two chain of foundation, one double crochet each in the next four stitches, then repeat from * to the end, when there should be three clusters of four double crochet each.

Second Row—Chain twelve, turn, skip nine chain, one double crochet in each of the others and one double crochet in the first double crochet. *Chain two, one double crochet in final double crochet of same cluster, two double crochet in the hole, one double crochet in next double crochet.



Pillow-Case and Towel Lace

Repeat once from *, chain two, one double crochet in final double crochet of same cluster, chain two, two double crochet.

Third Row—Turn, chain three, one double crochet in second double crochet, chain two, one double crochet in next double crochet, two double crochet in hole, one double crochet in first stitch of cluster, chain two, one double crochet in final stitch of same cluster, two double crochet in hole, one double crochet each in next four double crochet, chain two, one double crochet in each double crochet, two double crochet in final hole, one double crochet on turning chain.

Fourth Row—Chain twelve, turn, skip nine chain, one double crochet in each of the others and in each of the next seven double crochet, chain two, one double crochet in each double crochet, two double crochet in the hole, one double crochet in the next double crochet, chain two, one double crochet in final double crochet of same cluster, chain two, two double crochet in the end.

Fifth Row—Chain three, one double crochet in second double crochet, chain two, one double crochet in next double crochet, two double crochet in hole, eleven double crochet each in the next ten

double crochet, two double crochet in hole, one double crochet on turning chain.

Sixth Row—Chain twelve, turn, skip nine chain, one double crochet in each of the others and one in each of the next ten double crochet along the row, chain two, skip two double crochet, one double crochet in the next, two double crochet in



A Useful Medallion

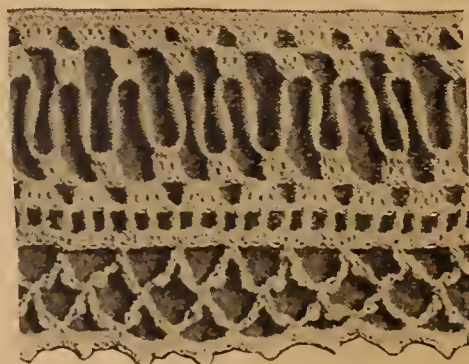
the hole, one double crochet in the next double crochet, chain two, skip two double crochet, ten double crochet along the row, chain two, two double crochet in the end.

Seventh Row—Chain three, one double crochet in second double crochet, chain two, seven double crochet along the row, chain two, skip two double crochet, one double crochet in next, two double crochet in hole and one in next double crochet, chain two, skip two double crochet and make a cluster as before, chain two, skip two double crochet, ten double crochet along the row, two double crochet in hole, one double crochet on turning chain.

Eighth Row—Chain thirteen, turn, skip ten chain, one double crochet in each of the others, and ten double crochet worked along the double crochet of preceding row, chain two, skip two double crochet, make a cluster as usual, chain four, make one treble crochet between the two clusters of preceding row, chain four, one double crochet in the final stitch of second cluster, two double crochet in the hole, one double crochet in the next double crochet, chain two, skip two double crochet, four double crochet along the row, chain two, two double crochet in the end.

Ninth Row—Chain three, one double crochet in the second double crochet, chain two, one double crochet in next double crochet, chain two, make a cluster as usual, chain four, one single crochet in the chain before the treble, one single crochet in the treble, one single crochet in the chain after the treble. Chain four, make a cluster after the next cluster of preceding row, chain two, skip two double crochet, ten double crochet along the row, three double crochet in hole, one double crochet on turning chain.

Tenth Row—Turn, chain three, skip the first double crochet, eleven double crochet along the row, chain two, skip two double crochet, make a cluster, chain four, one



Coronation Braid with Irish Lace

double crochet in final chain, one single crochet in each single crochet, one single crochet in next chain, chain four, cluster after cluster, chain two, two double crochet in end.

Eleventh Row—Chain three, one double crochet in second double crochet, chain two, one double crochet in next double crochet, three double crochet over the chain, chain four, one single crochet each in center three single crochet, chain four, three double crochet over the chain and one double crochet in next double crochet, chain two, skip two double crochet, one double crochet in next, two double crochet in hole, eleven double crochet to end.

Twelfth Row—Chain five, skip three double crochet of preceding row, one double crochet in each double crochet, two double crochet in hole, one double crochet in next double crochet, chain two, skip two double crochet, make a cluster, working three double crochet over the chain as before, chain three, one treble crochet in the center single crochet, chain three, three double crochet over the chain and one in the next double crochet, chain two,

skip two double crochet, make a cluster, chain two, two double crochet in the end.

Thirteenth Row—Chain three, one double crochet in the second double crochet, chain two, seven double crochet along the row, chain two, one double crochet in final double crochet of cluster and three double crochet in the hole, chain two, three double crochet in the next hole, one double crochet in the next double crochet, chain two, skip two double crochet, fourteen double crochet along the row.

Fourteenth Row—Chain five, skip the first three double crochet, fourteen double crochet along the row, chain two and make a cluster, chain two, skip two double crochet, ten double crochet, chain two, two double crochet in end.

Fifteenth Row—Chain three, one double crochet in second double crochet, thirteen double crochet along the row, chain two, skip two double crochet, fourteen double crochet along the row.

Sixteenth Row—Chain five, skip three double crochet, eleven double crochet along the row, make a hole, ten double crochet, a hole, two chain, two double crochet at end.

Seventeenth Row—Chain three, one double crochet in second double crochet, chain two, make a cluster, chain two, skip two double crochet, seven double crochet along the row, make a hole, seven double crochet along the row.

Eighteenth Row—Chain five, skip three double crochet, four double crochet along the row, chain two, four double crochet, chain two, four double crochet, chain two, one double crochet, chain two, two double crochet at end. Repeat from the beginning of first row for length needed.

For the edge rows proceed as follows:

First Row—Make one single crochet in



Insertion to match the lace at the left

the hole at the edge of the last row of the point. *Chain six, one treble crochet in the stitch in which final stitch of the preceding row was worked, chain six, one single crochet in next loop, and repeat from *, making one single crochet in the end of the center row, and six chain on either side of it. Work the second side of the point as the first was worked, and between the points chain three.

Second Row—One single crochet in the center of each loop, six chain between. Make another row of loops in this manner with two chains between the points.

Fourth Row—Eleven single crochet in each loop excepting the two-chain loop between the points.

Pillow-Case and Towel Insertion—In working this the directions for the lace may be followed, always working the upper half of the row and reversing for the second half.

Coronation Braid with Irish Lace—Use coronation braid in the finest size and No. 60 crochet-cotton.

First Row—Work three double crochet in every second thin space of the braid, and between the clusters chain three. Work a second row in the same way, making the clusters over the spaces of the braid skipped in the first row.

Second Row (worked on both first rows)—Make a cluster of four double crochet in each space, one chain between.

For the top of the lace now work a third row, making one single crochet in each double crochet of preceding row, and one single crochet in each space between clusters. There fasten off.

For the bottom of the lace work the third row as follows: One double crochet in every second stitch of the second row, and one chain between the double crochet.

Fourth Row—Two single crochet in space of preceding row.

Fifth Row—One single crochet in first stitch, *chain seven, catch in the fifth chain from the needle for a picot, chain eight and catch for a picot, chain two, one single crochet in the fifth stitch of preceding row. Repeat from * to the end of the row, then make another row of these loops, catching in the centers of the loops of preceding row.

Seventh Row—One single crochet in the center of each loop of preceding row, seven chain between.

Eighth Row—Four single crochet in first loop, chain five and catch for a picot in the last single crochet made, four single crochet in same loop. Work in this way in each loop along the edge.

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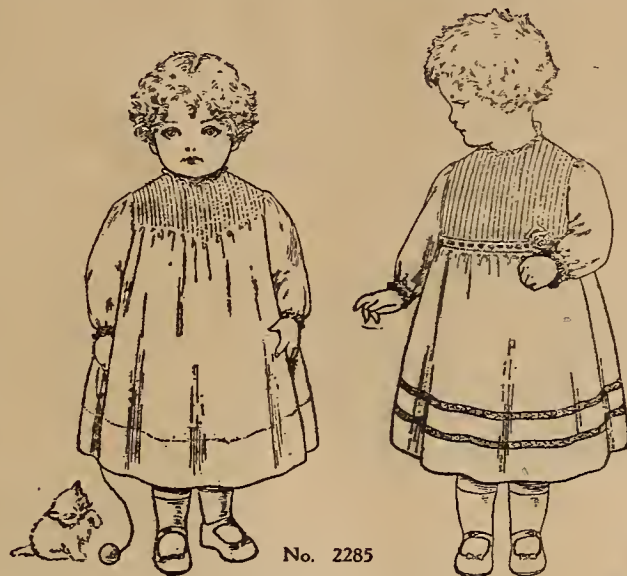
Simple Designs Specially Suited to Wash Fabrics

Selected by Grace Margaret Gould



No. 2286—Boy's Plaited Dress with Bloomers

1 to 4 years. Quantity of material required for medium size, or 2 years, three and one-eighth yards of twenty-seven-inch material, or two and seven-eighths yards of thirty-two-inch material. Price of this pattern is ten cents



No. 2285

No. 2285—Child's Tucked Dress in Two Styles

6 months to 4 years. Quantity of material required for medium size, or 2 years, two and three-eighths yards of twenty-seven-inch material, or two yards of thirty-six-inch material. The price of this pattern is ten cents



No. 1955—Boy's Panel Dress with Knickerbockers

1 to 4 years. Quantity of material required for medium size, or 2 years, four and one-fourth yards of twenty-four-inch material, or two and three-fourths yards of thirty-six-inch material. Price of this pattern is ten cents



No. 2251—Misses' Waist: Large Armholes

12 to 18 years. Material for 14 years, one and three-eighths yards of thirty-six-inch material, with five-eighths of a yard of contrasting material. Pattern, ten cents

No. 2252—Misses' Five-Gored Tunic Skirt

12 to 18 years. Material for 14 years, two yards of thirty-six-inch material, with one and one-half yards of thirty-six-inch material for tunic. Pattern, ten cents

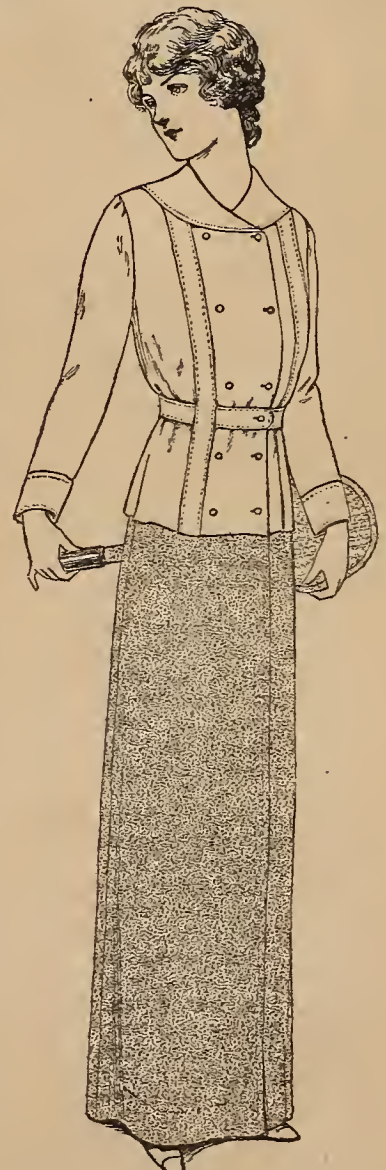


No. 2277—Misses' Kimono Waist with Square Yoke

14 to 18 years. Material required for 16 years, one and one-half yards of thirty-six-inch material, with three-fourths of a yard of satin. Price of this pattern is ten cents

No. 2278—Misses' Skirt with Flounce

14 to 18 years. Material for 16 years, two and seven-eighths yards of twenty-seven-inch material, or three and one-half yards of thirty-six-inch. This pattern, ten cents



No. 1886—Double-Breasted Norfolk Waist

32 to 40 bust. Material for 36-inch bust, four and one-half yards of twenty-four-inch material, or three and one-eighth yards of thirty-six-inch material. The price of this pattern is ten cents

No. 2179—Adaptable Five-Gored Skirt

22 to 34 inch waist. Length of skirt, 41 inches. Quantity of material required for 26-inch waist, three and three-fourths yards of thirty-six-inch material. The price of this pattern is ten cents



No. 2251
No. 2252



No. 2285



No. 2282
No. 2283



No. 2277
No. 2278



No. 1955



No. 1886
No. 2179



No. 2286

No. 2282—Collarless Waist: Closed at Side

32 to 46 bust. Material required for 36-inch bust, one and five-eighths yards of thirty-six-inch material, with one-half yard of silk for tie. The price of this collarless waist pattern is ten cents

No. 2283—Three-Piece Skirt: Side Closing

22 to 36 inch waist. Material required for 24-inch waist, three and one-eighth yards of thirty-six-inch material. Width of skirt in 24-inch waist, two yards. The price of this three-piece skirt pattern is ten cents

WOMAN'S HOME COMPANION
patterns cannot be bought in stores, nor purchased through agencies. They may only be ordered from our three pattern depots. Be sure to send to the depot nearest your home: Pattern Department, FARM AND FIRESIDE, 381 Fourth Avenue, New York; Pattern Department, FARM AND FIRESIDE, Springfield, Ohio; Pattern Department, FARM AND FIRESIDE, 1554 California Street, Denver, Colorado. Price of Catalogue, 4 cents.

THIS page illustrates a number of attractive designs for the different members of the family. No. 2251 and No. 2252 is for the young girl and is especially attractive developed in striped and plain materials. The other young girl's dress may be made of silk mull, cotton voile or any of the sheer batistes. The children's dresses may be of gingham, galatea, chambray or fine lawn, while the two costumes for women are suitable for any of the wash fabrics.



A Decoration Day Dinner

By Elizabeth L. Gilbert



THERE is no "farm dinner" better suited to being made into a company affair than that of Decoration Day. The whole outdoor world furnishes its color-scheme, and flowers can be used lavishly, without that haunting fear of expense that comes to the city woman of limited income.

A table with a large shallow glass dish filled with violets, peach and cherry blossoms for the centerpiece, and with a tiny "individual" bunch of these blossoms at each place, certainly is symbolic of the red, white and blue of this day of memories. The menu can easily be worked out in red and white, and the following will be found very satisfactory. If the chicken, cakes and gelatin are prepared in the morning this can be served in the evening without very much effort, and without any great pile of cooking-things to wash.

- (1)
Tomato Soup Whipped Cream
 Stuffed Crackers
- (2)
Pressed Chicken Potato Puffs
Creamed Cauliflower Kidney Beans
Buttered Rolls Currant Jelly
- (3)
 Coffee
- (4)
Beet and Cottage Cheese Salad
 Nut Wafers (or Sandwiches)
- (5)
Red Gelatin Snowball Cakes
 Pink and White Mints

By including the salad with the meat course, a three-course dinner may be served. In that case omit the nut sandwiches served with the salad.

Make the soup after the recipe found in "Farm Company Dinners" (March 1st FARM AND FIRESIDE). Just before serving add a tablespoonful of slightly salted whipped cream to each cup or plate.

The crackers are prepared by using various sandwich fillings between reception flakes or square crackers. For this dinner serve tomato and pimento fillings.



Beet Salad

Make a stiff boiled salad-dressing; chop just enough pimento and tomato into it to make it red; spread lightly on hot wafers, and serve at once.

The chicken is nicest if molded in a square mold which had slices of hard-boiled egg in the bottom. Turn this out on lettuce-leaves, and slice at the table.

If cauliflower is not obtainable use a very white cabbage instead. Soak either vegetable in salted water one hour. Par-boil in salted water till tender. Drain. Pour over it a white sauce made of one cupful of cream, one tablespoonful of butter and one tablespoonful of flour. Beat this smooth before adding. Let all boil up together a few minutes.

If dry beans are used soak overnight,

and cook slowly to make them keep their shape. Add only salt and butter for seasoning. The red of these beans contrasts well with the white cauliflower.

Nut Wafers—Thin triangles of buttered brown bread with English walnut-meats between.

Beet Salad—This is better with fresh tomatoes, but pickled beets can be used very well. Place slices of either vegetable on crisp lettuce-leaves. Make your cottage cheese into balls, pile them on the red vegetable, and surround with salad dressing. This may have, if one wishes, enough whipped cream in it to be almost white, and to stand up in puffs. Nuts may be chopped and added.



Potato Puffs

Snowball Cakes—Cream one and one-third cupfuls of sugar with one-half cupful of soft butter. Add one-half cupful of sweet milk. Sift two cupfuls of flour and two teaspoonfuls of baking-powder four times. Beat into the liquid mixture.

Add four stiffly beaten egg-whites and one teaspoonful of lemon extract. Beat. Bake in gem-pans, in a hot oven. Ice them with boiled icing, and roll them in cocoanut.

Boiled Salad-Dressing—One tablespoonful of sugar, one tablespoonful of flour, one teaspoonful of salt and one-half teaspoonful of ground mustard. Mix together, and beat smooth with a little sweet milk. Add one beaten egg and one-fourth cupful of creamy milk. Have one-half cupful of good vinegar boiling-hot; pour the other ingredients in, and cook until it is smooth and thick like custard; add one tablespoonful of butter, and beat hard. Have very cold at serving-time, and add one-half cupful of whipped cream. For a sweet salad add more sugar.

Potato Puffs (a good use for old potatoes)—Prepare plain mashed potatoes, adding an egg to each pint and beating till they are very light. Butter a baking-dish, pile the potatoes in it in rough mounds, and bake in a hot oven ten minutes, or until a delicate brown. The potatoes must be served in the baking-dish, and if a blue and white one is selected, it will add to the red, white and blue color-scheme of the dinner.

Red Gelatin—Use one envelope of any good gelatin, the juice of four lemons, one large cupful of sugar and two pints of canned cherry or strawberry juice.

Just as this begins to harden add one pint of chopped (and drained) pineapple or bananas. Serve in tall glass dishes.

A Page for Sunday Reading With a Discussion of the Sunday School Lessons

Joseph and Benjamin

By Rev. Chas. O. Bemies

Sunday-school lesson for May 25th: Gen. 43, 18-19, 23-34. Read Chapter 43.

Golden Text: He that loveth his brother abideth in the light.—I. John 2, 10.

The Bible, especially in the Old Testament and the four Gospels, is a country-life book. Let us interpret it accordingly. We believe that the Bible is a true record of facts.

ALTHOUGH Joseph married into the family of the idolatrous high priest of Egypt, becoming thereby adopted into the top-notch aristocracy of the nation, he never let the religion or position of his wife's people wean him away from the worship of the true God.

No wife, no position, power, influence or politics can beat a red-blooded man out of his religion. Joseph was also proud of his Hebrew blood, and kept the traditions and his heirship to the promises. He proved his rightful pride by making the name greater. If Joseph was so loyal to his religion and to his family blood, why didn't he during his twenty years of residence in Egypt, mostly prosperous, go up to Canaan to visit his aged father, Jacob, and his brothers? It was only three hundred miles away. He never even wrote.

This is the answer: If Joseph made himself known to his family Jacob would find out the rascality of the ten brothers in regard to Joseph and so plunge the father into abject sorrow and distrust against his ten sons for the rest of his life. Joseph loved his father too well to cause him this old-age misery, and so was content to bide his time—God's time. Meanwhile his brother Simeon, the self-willed, cruel one, was a hostage in prison awaiting the return of the brothers with Benjamin. Joseph felt that prison discipline would do him good. His seemingly rough treatment of his brethren was in order to try them out and to see Benjamin, his only full brother, without revealing his identity at present. But Jacob positively refused to let Benjamin go down to Egypt for fear of his safety, although faithful Reuben pledged his two sons as surety of a safe journey. But when they were close pressed for food Jacob told them to go to Egypt for grain. The sons insisted it was worse than useless to go unless Benjamin went also. And only after much persuasion and several more weeks of time, Judah becoming additional surety, that Jacob, bowed with grief, finally consented.

When Joseph saw that Benjamin was with them he gave orders for a feast to be prepared, commanding the Hebrews to

be present. The brethren were terrified lest some trap was being laid for them and began hurriedly to explain to the steward about the money which they had found in their full sacks after the previous trip, that they had brought it back and also enough more for another supply of grain. But the steward calmed their fears in the name of their God, assuring them concerning the money, released Simeon unto them and provided all things necessary for their comfort. When Joseph came the brethren bowed themselves down before him and gave their presents. Joseph's first question, "Is your father well?" shows his chief concern. His second question, when he had looked upon Benjamin, "Is this your youngest brother?" shows his next concern. Joseph tenderly blessed Benjamin, saying, "God be gracious unto thee, my son," and could stand it no longer, but quickly went out and wept.

After washing his face he came back for the feast. Joseph had his servants supply his brethren with an abundance of everything in sight, but to Benjamin, as the guest of honor, was given a fivefold portion.

It was the greatest feast of their lives, and they left the gorgeous dining-hall vowing that their host was the finest fellow they had ever met.

Joseph Tests His Brethren

By Rev. Chas. O. Bemies

Sunday-school lesson for June 1st: Gen. 44, 4-17. Read Chapter 44.

Golden Text: Confess your faults one to another, and pray one for another, that ye may be healed.—James 5, 16.

JOSEPH was wise when he had before treated his brothers roughly, for he wanted to make them think deeply about their great wrong to him twenty years ago and to repent and bring out their brotherly regard for each other. Now he puts them to the greatest test of all when he gives orders to secretly put back all their money into their grain-sacks, and plots to make Benjamin appear as a most ungrateful thief by having his own magnificent silver cup placed in Benjamin's sack. They started at daybreak the next morning after the luxurious feast, filled with great relief and happiness at their splendid reception; and now they were well on their journey home with Benjamin safe in their midst!

Their lightheartedness was soon turned to the deepest gloom, for before they had gone far the messenger from the great Egyptian overtook them and charged them with having stolen his master's precious silver cup! They were all instantaneous

and loud in their expressions of innocence, and, positive in that belief, they proposed to have the one killed with whom the cup was found, and the rest of them would become slaves. "No," said the messenger; "I'll take the one with whom it is found back with me and let the rest go." Immediately the search began, from the eldest down to the youngest; when, lo, the missing cup was in Benjamin's sack! They were all stricken dumb with astonishment and soul-grief, and rent their clothes at the neck in token of utter despair.

Instead of continuing on home without Benjamin, every brother acted as a unit and went back dejectedly to see what was going to happen to Benjamin and to stand by him to the last. The only reason that Joseph carried out this plot against Benjamin and the other brothers was to severely test them to see if they had truly repented into new and better characters.

They stood the test like men and like brothers. They were ready even for bondage themselves for the sake of their youngest brother. On the way back Judah's mind was busy with the plea for the defense. Joseph sternly charged them with rank ungratefulness; Judah humbly but valiantly stepped forward and step by step delivered one of the finest examples of dignified and effective pleading ever recorded in any language in any time.

A Young Child's Peril

By Eliot White

IT ALL happened so quickly and entirely without warning! The surprise and terror at the little boy's danger are scarcely lessened by the passing years, and his mother and I will probably hear as long as we live his strangely thrilling cries for help, and feel afresh that torment of suspense till we could reach him.

It was one evening during his third year, when he had been put to bed and the blinds shut in his room, and we had sat down to supper only a few feet on the other side of his closed door.

Suddenly we stopped eating in bewilderment and dread at hearing a very peculiar frightened wailing, repeated over and over. As the dining-room windows were open and the sound came mostly through them, we thought some child must be in great fear out in the field bordering that side of the house. A repulsive picture flashed into my brain of a little one calling in horror for help, but unable to stir at the approach of some grinning monkey or other malicious beast. But neither my wife nor I recognized in the sound the slightest suggestion of our own child's

voice that we thought we knew so well!

It was like the effort to grasp a baffling situation in a nightmare. The mind and limbs felt benumbed. Then, at the same instant, out of some abruptly unlocked chamber of consciousness our realization flashed from eyes to eyes, and leaping to our feet we gasped, "It's Maurice!"

Flinging open the door to his room, we rushed in. Empty! His bed was rumpled from the active little form, but was vacant and white as some terrible field of snow from which all life has been banished forever.

One of the blinds was open, and glancing in its direction I saw the child's hands gripping the inner edge of the window-sill and his arms passing over outside! That was all that was visible, but it was enough. The window was fifteen feet above an asphalt walk and a sharp cellar ledge. His crying rang more frantic. Would his baby strength last till I could reach him? Yes, the plucky fingers do not weaken yet. And who shall tell in words the rapture of grasping those plump arms after such torment of anxiety and drawing the dangling little form in its fluttering "nightie" safely into the room again?

He was too much dazed and terrified to give any clear account of his plight, but apparently he had lowered himself over the sill, expecting to draw himself back as easily, but finding this impossible had had the nerve to cling fast and scream.

A child's peril! What a vivid illustration of that, everywhere, and for all children, has been furnished by us by our own boy's providential escape from death or crippling! I have told of it here, plainly and without exaggeration, in the hope of moving some who read of it to share with us the more intense realization of all danger for somebody's darlings.

Peril unavoidable, of course, there is, but there is much also that can and must be removed. Ah, grievous is its weight about the neck of our whole nation, heavy as that millstone of which Christ, the tenderest Lover of little children, spoke in warning of offenses against "the least of these."

The diseases and weaknesses springing from undeserved poverty, malnutrition (the "easier word" for starvation), the perils of congested and unclean housing and crowded streets, neglect, evil companionship and example, the wickedness of labor imposed by cruel greed upon bodies scarce out of babyhood—these and, alas! other forms of Satan's own temptations and hateful devices against our country's children, everywhere, we must fight.

Our Young Folks

A Page for Boys and Girls

By Cousin Sally



The Prize Garden

By Emily Rose Burt

THERE was a big notice on the blackboard in the fifth-grade room. It said: "The school gardens will be inspected May 29th. For the best kept garden a prize of two dollars will be awarded."

There were two fifth-graders who had particularly nice gardens. Dorothy Bassett's was as neat as a garden could possibly be. There were straight little rows of plants, a clump of striped ribbon-grass in each corner, a trellis with a tiny rose-vine along one side, and not a weed anywhere at all to be seen. All around the edge there were white clam-shells, and every one of them was as clean as Dorothy Bassett could scrub it with the strength of her earnest little hands.

The other very nice garden belonged to Hayden Perkins. It was a vegetable-garden and had an even row of radishes, another even row of fresh green lettuce, four thrifty tomato-plants tied carefully to smooth stakes, several hills of string-beans and a small but vigorous pea-vine. No weeds, no stones, no dead leaves, marred the trim effect, and around the edge Hayden Perkins had built a trig little fence of sticks.

Now, both Dorothy Bassett and Hayden Perkins wished two dollars very much at just this time; Dorothy for certain pink-flowered hair-ribbons and sash to wear Decoration Day, Hayden for a new kind of speedometer to put on his bicycle.

It was agreed throughout the fifth grade that either Dorothy Bassett or Hayden Perkins would get the prize.

"I wish somethin' would happen to Hayden's garden," said Dorothy spitefully to herself. "If a cow would step on it I wouldn't care a bit."

Strange to say, Hayden was having the same kind of naughty thoughts.

"I wish the Griswolds' chickens would scratch Dorothy Bassett's garden all to pieces some night," he muttered.

Of course neither of them really meant to do anything at first, but as the days slipped by, the bad little thoughts kept coming back to each of them.

The evening before the twenty-ninth, Dorothy stole out after supper in the direction of the school gardens with her pet rabbit, Pinky. Pinky simply loved to nibble young lettuce.

At about the same time Hayden strolled down toward school with his dog Tige at his heels. Tige particularly enjoyed rooting for bones in flower-beds.

But when Dorothy had reached Hayden's garden and stood looking at the beautiful even rows and the careful bean-hills and the fresh lettuce she could not find it in her heart to put down Pinky in the midst of it.

"It's too mean; I won't do it," she declared stoutly, and was turning to go when across the garden she spied Hayden slowly retreating with his dog.

For Hayden, too, at sight of the pretty little rose-bush and the straight little rows of tender plants growing into flowers, had not had the hardness of heart to turn Tige into it.

They met at the gate going out and grinned shyly at each other.

"Your garden's looking fine," said Hayden.

"So's yours," said Dorothy.

And they each understood. The best part of it was that the next day the following notice appeared on the blackboard:

"As two of the school gardens were equally well-kept, two prizes have been awarded, one to each of the owners, Dorothy Bassett and Hayden Perkins."

Cousin Sally's Letter

DEAR COUSINS—May is the month in which you can most plainly show your reverence for the brave men who no longer are living. It is the month when Grandfather is most likely to tell you stories about when he was a soldier during the great war, and when Mother and Father will tell you of the boys in khaki who went to war as bravely as did their fathers who wore the blue and gray.

For many years we have been one country. But there was a time when the United States seemed two countries, and the Confederate flag waved over the brave men of the South instead of the flag of our country. To-day, one flag, the glori-

ous red, white and blue, is loved by everyone in every part of the North and South, the East and West, for brotherly love has taken the place of misunderstanding.

The southern laddie places flowers upon the grave of the soldier of the North who lies in the South; the northern lassie strews flowers upon the resting-place of the southern soldier who rests in the North.

Great ships go out into the oceans, and their sailors scatter flowers upon the waves in memory of the brave dead who sleep beneath, while many people go upon the bridges all over our land and shower flowers into the river's depths in memory of the dead of all our wars.

So you see, dear cousins, that while the thirtieth of May was instituted for and will always chiefly belong to the memory of those who served in the war between the North and the South, it is meant to honor all who fought for the country, no matter in what war.

As you gather the May flowers and practise patriotic songs let your mind be filled with love for every man who fought for what he believed was the right. Be like Lincoln, who loved all, and like Robert E. Lee, who was so like Lincoln in broadness of mind and in the tenderness which means real bravery.

Above all, as you march behind those who fought your country's battles, make up your mind that you will always uphold your country's honor and become exactly what it needs—good men and women.

Lovingly, COUSIN SALLY.

Letter from a Cousin

DEAR COUSIN SALLY—It has been a year and a half since I joined the Cousin Sally Club, and I like it better every day. We have moved back to Chicago from the South, and I am almost the happiest girl there is. I liked to go bathing in Tampa Bay, and it was easy to swim in the salt water. This summer I am going bathing in Lake Michigan, and I am going to visit the Zoo in Lincoln Park.

Your cousin, DOROTHY D. WOODCOX.

Ask Your Friends These Riddles

1. A family consisted of 1 grandfather, 2 fathers, 2 mothers, 4 children, 3 grandchildren, 1 brother, 2 sisters, 2 sons, 2 daughters, 2 husbands, 2 wives, 1 father-in-law, 1 mother-in-law and 1 daughter-in-law. Yet there were but 7 persons in all. Of what seven persons did that family consist?

Answer: The family consisted of an old man and his wife, the old man's son with his wife and their three children: two girls and a boy.

4. Can you prove that a cat has 9 lives? Answer: One cat has 1 life. No cat has 8 lives. One cat has one more life than no cat. So one cat has 9 lives.



Fifteen Good Books You Will Like to Read

The Stock Exchange from Within, by William C. Van Antwerp, fully answers the questions, "Of what use is the exchange?" and "What can it accomplish?" by giving facts concerning uses and abuses of speculation, publicity in exchange affairs, the day on 'change, etc. Illustrated. 459 pages. Price, \$1.50 net. Doubleday, Page & Company, New York.

The Young Farmer: Some Things He Should Know, by Thomas F. Hunt, is a practical book dealing with the solution of farm problems based on the experience of the author. 280 pages. Illustrated. Price, \$1.50. Orange Judd Company, New York City.

Horses and Practical Horsekeeping by Frank Townend Barton, tells of the history, breeds, habits, diseases and care of horses. 643 pages. Price, \$3.50 net. The Macmillan Company, New York City.

First Principles of Feeding Farm Animals, by Charles William Burkett, interprets the principles of scientific feeding for largest returns, in terms equally useful to student, stockman and farmer. It is

well illustrated and has a valuable index and appendix. 336 pages. Price, \$1.50 net. Orange Judd Company, New York City.

Co-operation in New England, by James Ford, is one of the publications of the Russell Sage Foundation. It discusses co-operative associations of workingmen and farmers. 238 pages. Price, \$1.50 post-paid. Survey Associates, Inc., 105 East 22d Street, New York City.

Milk and Its Products, revised and enlarged, a standard work by Henry H. Wing, has been brought up to date, giving in concise form the principles which help the reader to make dairying pay. 433 pages. Price, \$1.50 net. The Macmillan Company, New York City.

The Country-Life Movement in the United States, by L. H. Bailey, gives a deep thinker's opinion of the place of the farmer with regard to men in other professions, and deals particularly with plans for improving his prosperity. 220 pages. Price, 50 cents net. The Macmillan Company, New York City.

Australia To-day is a beautifully illustrated book descriptive of a wonderful continent. It covers Australia's business life, farming opportunities and scenic wonders. 176 large pages. Niel Nielsen, Monadnock Building, San Francisco, California.

Common-Sense Care of Babies, 57 pages, by Mary B. Austin, contains in addition to boiled-down practical information a table of the principal infectious diseases and their symptoms. Published by the author, 238 South Meridian Street, Indianapolis, Ind. Price, 50 cents net.

Beginnings in Animal Husbandry, by Chas. S. Plumb, tells of the methods of feeding, breeding and caring for all kinds of farm animals from horses to poultry. Numerous illustrations add to its clearness. 392 pages. Price, \$1.25. The Webb Publishing Company, St. Paul, Minnesota.

Home Games, by George Hapgood, is an exhaustive volume which includes all the well-known games and the newest and best charades, and games of action and thought. 200 pages. Price, 50 cents. The

Penn Publishing Company, Philadelphia, Pennsylvania.

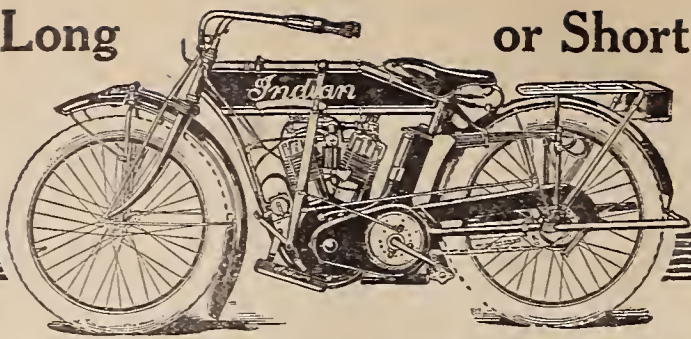
Making Money on Farm Crops, by Floyd B. Nichols, tells which crops are the best money-makers, and why. 280 pages. Price, \$1. The Fruit-Grower and Farmer, St. Joseph, Missouri.

Farm Buildings is a well-illustrated compilation of plans representing actual constructions designed by practical farmers and stockmen. 354 pages. Price, \$2. The Breeder's Gazette, Chicago, Illinois.

Wisconsin Farmers' Institute: A Handbook of Agriculture is a cloth-bound book prepared to preserve the most practical discussions of last year's closing farmers' institute. It is intended for free distribution. 320 pages. Bulletin No. 26, College of Agriculture, Madison, Wisconsin.

A Manual of Practical Farming, by John McLennan, is a plain statement of the results of scientific research toward solving real farm problems. 300 pages. Price, 50 cents net. The Macmillan Company, New York City.

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Summer Boarders? Yes

By Lilly M. Johnson

IF MANY farmers' wives who have kept summer boarders and lamented it as a disagreeable summer infliction had handled it from a strictly modern business point of view, which really means efficiency brought to the nth power, it could have been made a success from the farmer's wife's viewpoint, and a cause of congratulation, laudation and looking-forward-to-next-summer from the boarder's point of view.

A bright woman living upon a frequently traveled main road about thirty miles from a large city, the housekeeper for a widowed and aging father whose frailty made necessary his renting the small farm on shares, with no available help save a fourteen-year-old nephew, calmly faced the imperative need of adding to their income. That more money must be earned was certain.

Boarders?

Well, some of the neighbors had tried it and all said it was a "dog's life," it "wasn't as paying as they thought it would be," and that, "generally speaking, it was about the most disagreeable thing one could do."

Still, she had a six-room, story-and-a-half house, furnished as are most farm homes; a grassy yard with several shade trees, and a good garden-plot. She was a successful chicken-raiser and possessed two meek-faced Jersey cows. All these were valuable assets in setting a good table and keeping comfortable during humid days. Then too, though she did not realize it, and I do not believe yet comprehends their worth, she had her smile and gentle self-control as additional capital.

After careful consideration, she decided that keeping boarders was her best chance, but not having money to spend upon fancy fixings she was literally forced to do without many things she would like to have had when making her start. Two hammocks were bought and a couple of second-hand rockers intended for the yard were purchased and refurbished with white enamel paint (it did not require more than fifty cents' worth for chairs and stand). Plenty of pillows, some filled with straw for rough usage, others with feathers for hammocks and chairs, were made. An old stand was also enameled and put out in the yard. And, by the way, this proved one of her most appreciated comfort innovations, being always handy for the laying on of fancy work by the womenfolk; books, magazines and pipes for the men.

Every window was completely screened with black mosquito-netting, which was inconspicuous, and, though cheap, wholly barring flies and mosquitos.

An unusually generous supply of towels (the ten-cent-a-yard material), face-cloths and bed linens (really muslin) were also made.

Father and Fred made the garden, which included a lengthy hedge of sweet peas, a small bed of pansies and sweet alyssum; and a plat of ribbon-grass. After the deep plowing and constant cultivation it received, no garden-spot of even less than ordinary gratitude and intelligence could do aught but be a record-breaker when it came to yielding vegetable, flower and ribbon-grass crops.

The chickens were looked after in the same whole-souled manner and seemed to take pride in trying to beat the garden when it came to producing results.

The next step was a frank advertisement in the near-by city papers stating that boarders were wanted at a plain farm home offering no advantages save country calm, cleanly comfort and plain home cooking.

When the first boarders, two tired city clerks, came, the first day they were doubtful; the second, satisfiedly expectant; the third, despondent lest it could not last; the seventh, wishing their vacation lasted four instead of two weeks; at the end of two weeks, tearful, but energetically declaring "This same place for me next summer."

What held of these first boarders was true of many others.

To-day, after five summers of making a "home" out of a boarding-house for tired city people, she has a large bank-account, three additional rooms (a long shed divided into a summer kitchen, a bedroom for Pa and Fred, and a storeroom) have been built, all rooms sum- mery and comfortably furnished, a piano, a horse and buggy for Pa, Fred and herself, and leisure for four months out of the twelve.

Even before the first summer was over she was obliged to refuse to take people, and in this coming summer and fall season a new method of housing will be introduced, and the orchard, whose trees are mostly old, gnarled and picturesque,—another valuable asset,—is to be turned into a money-coiner.

This innovation will be the erection of small weather-proof sheds with large window spaces shielded by netting, and when necessary enclosed with shutters. They will serve as sleeping-tents, catering to the cityfied idea of sleeping outdoors.

There is croquet and a tennis-court, but that is all; for this successful farm woman knows that people go to the country because they want to get away from the city's glare to the cool green of the country; they are weary and want to rest; they crave genuine home cooking, not a tawdry canned vegetable imitation dairy lunch or ordinary hotel; they desire relaxation, not strenuousness. These demands were waiting to be met, and she corralled and catered to them, cementing her services with gentle friendliness, smiles and eternal feminine efficiency.

There is nothing unusual about her success save that she used the commonplaces which so many, unseeing, pass by, and with wise adaptability made the most of what she had. She kept to farm products, well but not fancily prepared, and served upon a snowy-linen-decked and flower-graced table. She kept the bedrooms immaculate, and she was ever courteous, giving smiles, smiles, smiles.

I know, for I have been one of her thrice fortunate guests.

A Frost-Proof Flower-Bed

By Ida M. Angell

IT IS very important to use frost-resisting annuals for all flower-beds that occupy prominent positions, especially those that can be seen from the house windows. One discouraging experience taught us a lesson. A large plot sowed with tender annuals, and visible from two rooms, became a blackened mass overnight as a result of an extra early frost. For the rest of the season we had to choose between dead vines or bare ground for an outlook. The next spring we made sure to fill that bed with the hardiest annuals on the list. Pansies, petunias, verbenas, calendulas, sweet alyssum, mignonette, cornflowers, annual larkspur and annual phlox were chosen. These plants gave bloom for several weeks after the sensitive sorts were killed by frost.

Calendulas are very hardy brilliant yellow flowers that bloom every month in the year in more southern latitudes.

Petunias, also, cheat the frost, thawing out to their natural state, even after being wilted by the cold.

Pansies, sown in the spring and kept from summer bloom by nipping off the buds, will produce a delightful abundance of bloom in the cool fall days. These frost-defying plants yielded fresh flowers when ice was forming outdoors, and when well-protected tender sorts were blackened with the cold. Like the petunias, even when touched with frost they revive after thawing.

Verbenas, still gayer in coloring, can be depended on for the frost-proof bed. These endure, without permanent injury, a temperature several degrees below the freezing-point.

Sweet alyssum and mignonette are such determined bloomers that a covering of snow did not discourage them. Alyssum is useful as a self-sower and blooms when less than two inches high. Mignonette is sown about the end of July for fall flowering. It will bloom for six weeks after frost kills the tender annuals. We have picked it when the thermometer stood at eight degrees below freezing.

Garden records for various years give the following proofs of hardiness:

After four mornings when the thermometer was twenty-six degrees, godetia still escaped injury.

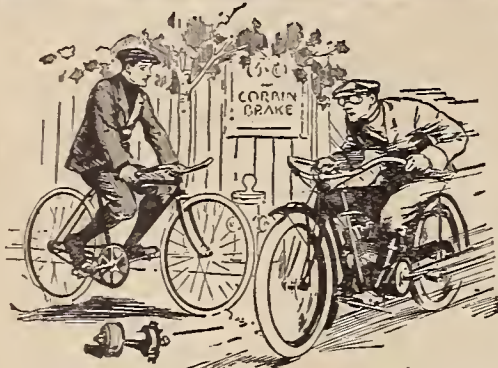
One November morning, when ice in the water-pail was nearly a half-inch thick, the hardy annuals were undisturbed.

Another morning in early November, when tender annuals were found destroyed by the night's frost, the hardy bed, although drooping with the cold, gradually thawed and revived; this particular bed contained annual phlox, verbenas, annual larkspur, sweet alyssum, everlastings, cornflowers, asters, petunias and pansies.

One season an unusually cold October day showed ice in the water-pail until almost noon. In the face of this temperature verbenas, pansies, cornflowers and mignonette were still blooming as usual.

After a cold night, when the tender sorts were covered with carpets (which failed to save them), the hardy bed, containing cornflowers, sweet alyssum, everlastings and pansies, escaped without protection.

Aside from the advantage of having a display of frost-resisting flowers, some of these varieties make a better growth when planted for cool-weather effects, as heat does not agree with them. Asters should be sowed in early June, sweet alyssum in early July, cornflowers in June, larkspur in the spring. Any sorts that bud too early should be nipped back.



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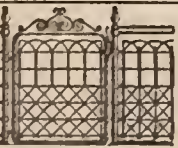
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FARM AND FIRESIDE

EVERY OTHER WEEK THE NATIONAL FARM PAPER

ESTABLISHED 1877

SATURDAY, JUNE 7, 1913



Swat him

THE EDITOR'S BULLETIN OF BETTER THINGS COMING

Cover Design

The cover design of the next issue will picture two Scotch collies at play, and will please the little folks especially; also dog-lovers among the grown-ups.

Editorials

FARM AND FIRESIDE wishes to be known as a farm paper that speaks its mind. Nowadays there are a lot of mighty good things to talk about and also some very poor things that ought to have something said about them too.

Among the things that will be discussed in coming issues are the improvement of veterinary service, the folly of forcing dairy cows to give a large amount of milk in seven and thirty day tests by unnatural methods, balanced rations for men as well as for animals and some of the newer agricultural discoveries that have not yet been generally announced.

Special Articles

"Peaches That Bring Premiums" is written by a successful grower who, in addition to his five normal senses, has an extra "peach sense." He tells what every grower of fruit ought to know about hiring help, grading and packing the fruit in standard packages, market requirements and, in short, all about peaches from p to s.

"Milch Goats—If Profitable in Europe. Why Not in the United States?" This explains the difference between the milch goat and the Angora. It tells of goats that don't and won't eat tin cans and don't hutt as they sometimes do in the comic papers. The milch goat is gentle, refined and is so much like a little cow that you will want to know her better.

The Headwork Shop

The Headwork Shop in the next number will be devoted to the result of the Milking-Stool Contest announced some weeks ago. Pictures of a dozen or more excellent stools will be published, together with reasons why those particular stools have stood the test of time. The prize-winners will be announced.

Poultry

"How to Handle Incubator Chicks" is a question which will be discussed in the next issue. Besides this other subjects of peculiar interest just at this time will appear. One poultryman of experience will give his method of building mite-proof roosts. The summer work should pave the way for winter egg production.

Farm Notes

Increased crops and strict market requirements are demanding more and better farm machinery to do the work quickly and well. The gas-engine will receive consideration again in the next issue. Another contributor will point out how the weather reports have been of value to him; not the weather forecasts, but the statement of what the weather at distant places has been the previous day. The Farm Notes Department will include, in practically every issue, some method of making the work of the farm fit the conditions of the market.

Garden and Orchard

What has been your experience in thinning fruits? Mr. O. R. Abraham will give his in the next issue; and another gardener will give an original and an extremely practical method of string-pole beans. Besides this there will be some interesting facts concerning the insects which help or hinder the gardener.

Fiction

Look for the new serial starting in our next number. There's a great treat in store for our readers, most of whom are familiar with Hayden Carruth's adventure story, "Track's End." This new story by Mr. Carruth is even better than "Track's End," telling of wonderful and thrilling adventures in caves in the Middle West. Whether you are young or old, man or woman, you will find the story a most fascinating one from beginning to end.

Household Department

An article "On Weeds and Wild Fruits That are Good to Eat" in the next number tells about some wonderful discoveries made by Uncle Sam's investigators. Many of the weeds we now discard as worthless are mighty good to eat. This article tells you what they are, and how to prepare them for the table.

There will also be practical helps for the kitchen contributed by housekeepers.

Needlework

Rag rugs for floor-coverings are nothing new to you, but you don't realize their real beauty and how artistic they may be, if certain colors are chosen to go with certain things in the room. This article tells how to crochet the rugs, and select the colors.

WITH THE EDITOR

The Page Bill Again

What has become of the Page Bill? We are thinking of nothing but the tariff now, and the coming currency law, and the very energetic and attractive gentleman who is giving us a new kind of an administration at Washington. All these things are important, but tariffs are not as important and money is not as great a thing as children.

The Page Bill, readers will remember, is a bill which proposes that the United States Government appropriate about what a couple of good battleships would cost, to help state governments make over their common and high schools.

Most of the great humanitarian organizations of the Nation are on record as favoring the Page Bill. About the only one which has failed to approve it is the national association of agricultural experiment station workers. And I think it is fair to say that a large number of the agricultural college men and experimental-farm people wish they were on record for it.

I hope the incoming of the new administration will not result in any loss of support for the Page Bill. I hope that the rival bill championed by Mr. Lever in the House and Senator Hoke Smith in the Senate will not be accepted by either of the Houses of Congress in the place of the larger and more comprehensive measure of Senator Page of Vermont.

The Smith-Lever Bill would give the experiment stations more money from the federal treasury. The Page Bill would give these agencies just as much as the Smith-Lever Bill, and would give something to the common schools.

Education That's Useful

Every farmer knows that our schools are not practical. Every farmer's wife knows that her daughter gets very little out of the rural school that really makes her any better wife or mother, or better fits her for the task of making a living. And yet it is safe to wager that a large proportion of us, if the matter were presented to us of making the schools more practical, would object to the change.

We need vocational education. That is, our education should be changed to a system which will make the schools into workshops. Children need to be taught to work. They need to be taught to think about work, to write about work, to talk and recite about work, and to figure work out.

By work, I mean things that concern our vocation in life. And by vocational education, I don't mean that the school district ought to say, "Now this is a farmer's daughter! She must be educated for a farmer's wife, and for nothing else!" By no means. But I do say that the school authorities should say, "These are farmers' children. They must be educated. True education is obtained by the study of things, not books. What things shall these farmers' children study? Why, naturally, the things of their surroundings—the things that their parents, and their neighbors, and their playmates have to handle and work with and understand. Cows! Horses! Soils! Crops! Pests! Machinery! Farm questions! These are the things for them to study, because they are already interested in them. They will be all the better farmers and farmers' wives for it, but even if they don't become farmers, they will be smarter people wherever they live and whatever they do, because they have been educated in an atmosphere of studying things rather than books."

Wishing Too Late

The Page Bill will start the ball rolling for this sort of education in the rural schools. It will offer money to help in those States that help themselves.

I studied physiology in a rural school. I learned the names of bones, muscles and nerves. I found out a lot of things about the hygiene of the human body—most of which I have since forgotten, and much of which has since been found to be false. All very well—but how much more about physiology I should have known if the study had related to the structure of cows, hens, hogs and cattle!

The matter of foods ought not to be divorced from the question of feeds and feeding. How much more sensible a course in physiology it would be for a rural school if it taught the physiology of animal husbandry and the easy first lessons in the principles of the care of the living being, which are about the same for people as for live stock. We should learn more of human physiology than we do now. Of course no system of teaching can make the children as wise in these things as old and practical farmers are—but it would give them an interest in the things that their fathers and mothers are doing, and in the matters by which the family make a living. This is vocational education.

Every child, in city or country, should have manual training. That is, every boy should know something about working in woods, metals and leather, and every girl should do systematic work in cooking, sewing and housekeeping. They can write about these things, and thus learn language. They can do problems about them, and thus learn figures. They can read poems, study pictures and peruse books related to them, and thus learn literature and art.

That School Had Life

We had one teacher in our old school who left a regret in every child's heart when she took another school. She had us compute the yield of an acre of corn when every hill had three good stalks, and every stalk a good ear; and when one hill in every ten was vacant. It made us good arithmetic scholars—and it made us study corn-growing. She made us measure haystacks, barns, bins and corn-cribs, and gave us oceans of arithmetic questions from these measurements. She had us make up accounts of our farm properties. She got us into the study of the cost of what we fed to our animals. There wasn't a single subject she taught that she didn't tie up with the life of the farm so that while we learned everything other teachers taught—and more of it than we learned from the others—we became alive to the problems and the interests of farm life as we had never been before.

Life! That is the test of a good school—and that school had life. I want the Page Bill passed by Congress, because it will bring to the little children of the rural schools teaching related to life. And that's real Christianity—for He came that we may have life, "and that more abundantly."

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FARM AND FIRESIDE is published every other Saturday. Copy for advertisements must be received three weeks in advance of publication date. \$2.50 per agate line for both editions; \$1.25 per agate line for the eastern or western edition singly. Eight words to the line, fourteen lines to the inch. Width of columns 2 1/4 inches, length of columns two hundred lines. 5% discount for cash with order. Three lines is smallest space accepted.



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The Farmer's Table

A POPULAR city conception of a farmer's table is an appetizing spread of fresh, farm-produced viands generous to the point of surfeit. How many farmers' tables actually measure up to this conception? A considerable number do, but many more fall far short of furnishing a well-balanced supply of food that appeals to the diner while supplying him energy and mental stimulus as well.

The farmer's table too frequently furnishes a ration adapted to the "drafter" rather than to the "thoroughbred." Generally speaking, in the past the farmer has been in the "draft" class of workers. He conquered forest and prairie by the might of brawn and muscle. Now he is more dependent on a practical, free-working mental equipment. The beefy, slow-going characteristics are no longer winning the fullest success from the soil. By means of improved plant and animal life, knowledge of soil and cultural requirements, mechanical aids and better marketing methods, the farmer to-day wins by this happy combination of mental equipment, mechanical dexterity and plain, every-day horse-sense.

In consequence the food that gives to the thoroughbred the nerve force, stamina, courage and bone and sinew to match needs to be substituted for the general-purpose ration.

Hog, hominy, beans and molasses were admirable for the farmer clearing the forest, wielding the ax, maul, cradle and flail; but for the farmer whose thought must be centered on the complexities of modern farm problems various fresh and preserved fruits, vegetables, grains, meats, fish and nuts must contribute to a ration that will build up nerve force, bone, sinew and muscle that shall make the modern farmer a "thoroughbred" in capacity.

Clear thinking, active, efficient control of mechanical aids, together with a high order of executive ability, will henceforth contribute most to the farmer's success, and these qualities must be developed and sustained primarily by his diet. Did someone say, "Eugenics must also have a part"? Here the farmer is handicapped. He builds up and improves his thoroughbreds by scientific breeding as well as feeding, but his individual case depends on right living, right equipment, initiative and pluck.

More About Milking-Machines

THE problem of milking by means of machines is still a long way from being solved, but we are much nearer the goal than five years ago, or even a year ago. More people are thinking about mechanical devices for lightening the work of tired hands and aching fingers than ever before.

The New York Experiment Station has announced the result of a milking-machine experiment which covered a period of over four years. The experiments show that, including the time required to get the machines ready and to wash them after milking, cows can be milked by machine in 3.86 minutes per cow, as against seven minutes for hand milking. A higher class of help is, however, necessary to milk by machinery successfully.

For dairies of less than fifteen cows the use of machines was considered unprofitable and not to be recommended.

The hundreds of applications filed in the United States Patent Office testify to the interest in machine milking and to the experts who are working on the problem. Present-day developments indicate that best results are obtained by the intermittent-suction principle, but we look for the time when milking-machines will be cheaper and simpler. The cream-separator of to-day is about one fourth as large as one of equal capacity twenty years ago. A similar simplification may be true with milking-machines.

Etiquette

By Berton Braley

MY KITTY is the nicest one,
Her fur is soft as silk—
But, goodness, lookee what she's done,
She's spilled her bread and milk!
I does my vewy best to show
My kitty how to eat,
I feeds her wiv a spoon—just so—
But she ain't vewy neat.

I guess her mama never knowed
The nicest way to do,
'Cause if she had she would of showed
My kitty manners too.
My mama shows me everything,
And it would be a shame
If I'd not twy my best to bwing
My kitty up the same.

So, kitty, you must learn to eat
More care-ful and pre-cise,
And you must look so clean and sweet
That folks will say, "How nice!"
I wished I had a pussy-cat
As neat and cute as you,
A pretty kitty, white and fat,
Wiv such good manners too!"



The World's Greatest Agricultural Exhibit

THE Panama-Pacific International Exposition to be held at San Francisco, beginning February 20, 1915, will have the largest display of agricultural interests that has ever been gathered together in one place.

Over forty acres of the exposition site will be devoted to agricultural, horticultural, live-stock and other interests which will appeal to the farmers of the world. The Palace of Agriculture alone will occupy ten acres.

While the purpose of the exposition is to commemorate the building of the Panama Canal, the commercial value of the Panama Canal to agriculture has not been overlooked; hence the large scale on which the agricultural exhibit has been planned. The money expended will not be wasted, for the people from foreign lands who see the exhibits will be future purchasers of our farm products, or articles made from them.

A Penny a Day for Health

BROADLY speaking, we employ a physician only after illness occurs, and by this mistaken policy the per capita cost for this mode of health-maintenance reaches a large annual expense. In comparison with disease curing, disease prevention, as demonstrated in the Panama Canal Zone, has astonished the civilized world. Science and sanitation have made that former hotbed of disease more healthful than the most favored American community. Most surprising, this feat, formerly thought impossible, has been accomplished at a cost of a meager penny a day for each resident of the Panama Zone.

This demonstrated achievement alone is worth more than the immense cost of the canal construction to the American people. No longer need any hot or unhealthy region allow disease-breeding infections to prevent health and prosperity from being the normal condition of the community.

What has been done in the Canal Zone will be much easier of accomplishment in all southern territory of America, and tropical countries elsewhere through this Canal Zone demonstration. Particularly our Southern States can immediately profit by introducing the new health régime and make greater safety for their own residents and settlers from the Northern States now prevented from going South through fear of unhealthy conditions.

What better slogan can any community adopt than that now current in the Canal Zone: "A Penny a Day for Health," and then make systematic scientific sanitation prevent disease?

The Creamery Promoter Again

THE month of June, when dairy cows are producing the greatest aggregate amount of milk of any time of the year, is a favorite month for the activities of creamery promoters. Basing their assurances for a large and prosperous business on the June milk yield, these promoters have influenced thousands of dairy-men to buy the material and machinery for a creamery capitalized generally at from \$5,000 to \$8,000 and usually worth about half the amount. Such a plan is not to be confused with a co-operatively organized creamery where the farmers and local business men take an active spontaneous interest in the organization and are not talked into it by promoters who cite successful co-operative creameries as object lessons.

The creamery promoter is not interested in helping the farmers, but rather in selling them a creamery establishment at a high price and making a large commission on the transaction. The promoter is almost always an agent of a building and supply company, is a good talker and radiates prosperity—which formerly belonged to others.

At least 75,000 pounds of butter-fat, or, expressed differently, the total yield of four hundred good cows, is needed to enable a creamery to operate economically throughout the year. The amount of milk or cream produced in the spring and summer is very misleading as a basis for calculation.

Farmers contemplating the establishment of a local creamery on the co-operative system are advised to write to the Dairy Division of the United States Department of Agriculture for full and reliable information on the subject. Most of the experiment stations are also able to give this advice, and any who are in doubt may address their inquiries to FARM AND FIRESIDE, which will refer them to the nearest source of official information.

Remember that about a thousand unsuccessful creamery plants have been promoted in the United States, and dairymen will do well to give promoters plenty of passing room during the next few months. And don't sign your name to their papers under any pretext which they may give.

I believe lots of boys leave the farm to get a good night's rest

The Old and the New in Horse-Doctoring

Some Superstitions We Must Forget and Up-to-Date Facts Worth Knowing

By Dr. A. S. Alexander, Veterinarian

The Prevention of Heaves

THE horse that "contracts" heaves usually is an exceptionally hard worker and has a hearty appetite. That is the sort of work-horse to own, but it is man's fault if heaves is contracted. He feeds too much bulky hay and fodder and works the horse too soon after a meal. The stomach is then distended and so presses injuriously upon the diaphragm, lessening the chest cavity and interfering with the natural action of the lungs. Dusty or moldy hay is especially injurious. Such feed induces indigestion, an ailment always present in heaves. It is indicated by the escape of gas from the rectum during the coughing-spells of the heavy horse.

Indigestion is supposed to irritate the pneumogastric nerve of the stomach and, in a reflex way, the branches of the same nerve which go to the lungs. The lungs of the heavy horse are abnormally large and distended with air. The myriads of small air-chambers in the lung tissues have broken down to form large air-chambers with weak walls, which cannot perfectly expel air. The abdominal muscles are, therefore, brought into play to help expulsion. It is for this reason that the horse is seen to have a double, bel-lowslike motion in breathing.

It is not dust in hay that causes heaves. It is the bulky, dusty, coarse, woody hay that is to blame, by causing indigestion and undue distention; but the dust aggravates the cough. Clover-hay does not cause heaves, if free from dust and mold and judiciously fed. It is excellent horse-feed and much more nutritious than timothy-hay. Woody, moldy, dry, brittle clover-hay that has been wet and heated in the curing process will, however, tend to cause heaves, and especially so if fed in large quantities just before working the horse. Farmers as a

IN PRESENTING these articles on veterinary subjects the editor does not take the platform as encouraging farmers to do their own horse-doctoring. In all serious cases, surgical cases in particular, the work should be performed by an expert practising veterinarian. But Farm and Fireside readers who want to know how to act intelligently in handling horses, sick or well, through a better knowledge of horse anatomy will be benefited by these veterinary writings, which will appear from time to time.

The Editor

rule feed far too much hay, waste this feed and hurt their horses. The horse's stomach holds but three and one-half gallons. In it oats and other concentrates are digested. Water passes through the stomach to the first large intestine (caecum, or "water-bag"). It flows through some seventy feet of small intestine to reach this receptacle.

Hay is not digested in the stomach to any great extent. It passes through the stomach and is digested in the small and large intestines. Hay to be digested must be well chewed, and this takes time. The hard-worked horse gets insufficient time to chew hay at noon. He bolts his hay and grain. Then drinking-water is allowed in large quantities, and it washes undigested feed out of the stomach. Indigestion follows. Distention is present from bulky hay and the gas generated by fermentation. The horse now breathes with difficulty at work. Heaves results.

To prevent heaves, avoid the causes mentioned. Feed most of the hay at night, and none at noon in the hot, busy season. Do not work a horse soon after a meal. Give the drinking-water before feeding. Allow as a day's ration about one pound of concentrate and one pound of hay for each one hundred pounds of horse. Increase concentrates for the hard-working horse, and increase hay and fodder for the idle animal. Never allow a horse to stand for a single day

idle in the stable. At all times keep the bowels normally open. Heaves will then be a rare disease.

Wounds of the Hoof

NATURE often repairs wounds of the hoof without help from man. All man can do is to assist nature; but often he hinders the reparative process, and sometimes his interference is positively harmful. This is so when he soaks the injured foot in an old, dirty tub and forgets to change the water each time it is used. The foul, soaking tub is a veritable abomination. It should be accounted a relic of barbarous days not to be used by the modern man of enlightenment.

This advice refers especially to the treatment of a nail-puncture case. It may, however, be admissible in some cases to treat sores of the coronet, or suppurating corns, by soaking in a tubful of antiseptic solution.

The average poultice also is an abomination and positive damage in many a case. This certainly is so as regards the cow-dung poultice. Germs teem and multiply in it, and these germs induce pus or possibly may cause tetanus (lockjaw). Any hot, moist poultice in which an antiseptic is not mixed will harbor and grow noxious germs. If a poultice of any sort is used, it should be made up with a solution of a good disinfectant or germ-killer.

Modern treatment seldom employs a poultice in the nail-prick case. When a nail has been found and removed, the horseman often is contented to pour some turpentine on the wound and allow the opening to close. Germs may be retained, and in the absence of air they may cause tetanus; for the tetanus germ can live and grow only in the absence of oxygen. The right way to handle the case is to remove the shoe, cleanse the hoof thoroughly with soap and hot water, pare away all soiled horn of the sole and rinse it off with a 1-500 solution of corrosive sublimate (bichlorid of mercury) or five-per-cent. solution of coal-tar disinfectant, lysol or carbolic acid.

Then cut down upon the puncture with a sharp, sterilized hoof-knife, removing enough horn to expose the wound and allow blood, serum or pus to escape. When this has been done the wound should be well swabbed with the 1-500 solution of corrosive sublimate and at once covered with a mixture of one part of iodoform and seven parts of boric acid, fresh absorbent cotton and a clean bandage, to be covered, in turn, with a square of clean gunny sacking, held in place by a strap around the pastern.

If there is objection to the strong odor of the iodoform mixture, substitute one part each of calomel and subnitrate of bismuth and six parts of boric acid as a dry dressing-powder. Renew the dressing daily. Often the treatment will lead to a speedy and perfect recovery. If a funguslike growth comes down through the wound in the sole, add an equal part of powdered alum to the dressing-powder, and cover the dressing with a wad of oakum to cause pressure.

If joint-oil (synovia) flows like liquid vaseline from the wound the synovial bursa has been opened by the nail. Such a serious case should have the immediate attention of a skilled veterinarian.

Wanted—By the Health Authorities—The Fly

Was Last Seen in Bad Company Carrying a Million Disease-Germs and is Now at Large

By Clarence M. Weed

WE HAVE learned that the house-fly is a dangerous pest because it carries the germs of typhoid fever and other human diseases. So there has been a great awakening of interest in fighting this fly. "Swat the fly" and "clean up the breeding-places" have been the war-cries heard all over the land.

More recently we have learned that a cousin of the house-fly is even more dangerous. It is sometimes called the biting house-fly, but more commonly the stable-fly. It looks so much like the house-fly that Dr. L. O. Howard suggests "a good way to distinguish between the two flies is to allow them to walk over your hand." If it bites it is the stable-fly, if it does not bite it is probably a house-fly. But you will not want to try this when you learn that if it bites it may leave the germs of some of the most deadly diseases in your blood. You will rather be content to swat it, being sure that whichever it is it ought to be killed.

How to Tell Them Apart

The house and stable flies resemble each other very closely, but can be distinguished by a careful examination. The house-fly is not able to bite, and it does not suck blood. Both sexes of the stable-fly can bite, and do suck blood.

When the house-fly is at rest and you look down on it you cannot see the proboscis, or beaklike mouth, projecting in front of the head. When the stable-fly is at rest in the same position you can see the proboscis projecting out in front.

In the house-fly the vein running through the middle of the wing turns abruptly upward near its outer end. In the stable-fly this vein is more nearly straight. The top of the abdomen of the stable-fly has clove-brown dots, especially in the case of the female flies. The illustrations show the appearance of the two flies magnified about three diameters.

Last summer stable-flies became unusually abundant in northern Texas, swarming on domestic animals in such numbers as to be a veritable plague.

An investigation showed that the outbreak extended over practically all the

region where grains were largely grown last year. The pests bred in the rotting straw left after thrashing. The losses in cattle killed and weakened by disease and worry, in reduced milk-supply, and in loss of flesh of cattle were enormous.

The life story of the stable-fly has recently been worked out very carefully as follows: The mother fly lays masses of eggs in rotting straw or other material; she may lay fifty to a hundred or more such eggs in a day. In two or three days each egg hatches into a whitish maggot that begins to feed on the decaying straw. In warm weather this maggot will be fully grown as a maggot in two or three weeks.

Then its outer skin becomes hard and brown as the maggot larva changes to a pupa. This pupa stage is a quiet one in which the insect takes no food and is unable to move about. After a week or ten days the pupa changes again, this time to a full-grown stable-fly, that soon starts out on its blood-sucking career.

The time from the laying of the egg to the maturing of the fly averages about one month. It varies, however, with the weather. In a hot season growth is much more rapid than in a cold one.

The stable-fly breeds by preference in rotting vegetation. It is attracted to manure-piles, preferring those in which much straw is mixed. Small piles of rotting straw or other vegetation or of manure should not be left in neglected

fields or corners. If spread out it will dry so that the maggots cannot live in it.

Most insects are destructive in their earlier stages, but these flies do most damage when full grown. They bite through the skin and suck the blood of warm-blooded animals, including man. After piercing the skin the fly gorges itself with blood, commonly staying in position until full-fed for the time, unless brushed off. In such a case it flies to another animal. In this way the fly may carry disease-germs quickly from the blood of one creature to the blood of another.

After a full meal the fly usually rests a few hours on a leaf or board, digesting it, before it is ready for another attack. They seem to take two meals a day when they can get them, and they are generally successful.

It has been believed for years that this fly is an active agent in spreading the germs of anthrax and glanders. Lately it has been convicted of being the carrier of the dreaded infantile paralysis which has long baffled the doctors by the mystery of its appearance and the sudden deadliness with which it comes.

Infantile Paralysis is Spread by Flies

When infantile paralysis is not fatal it is very likely to leave its victim paralyzed for life. It is one of the most dreaded human diseases.

Careful studies of the records of the disease show that it is more frequent

after midsummer than before. Its period of appearance is about the same as that of the greatest abundance of the stable-flies. This fact led two scientists at Harvard University, Messrs. Rosenau and Brues, to experiment with the possibility of this insect carrying the virus of the disease.

By means of small monkeys kept in cages into which the stable-flies were introduced, they showed that the flies do carry the virus, so that their bites may really be deadly if they have previously bitten a human being or an animal affected by the disease. Their conclusions were corroborated by similar experiments conducted in Washington, D. C., by experts of the Marine Hospital Service. According to statistics, this paralysis is especially a rural disease. Children and adults in the country are more commonly attacked than those in the city.

The fly pest is best controlled by means of traps. One of the best fly-traps has been described by the Minnesota Experiment Station. It is shown in the sketch below, and is made of boards and ordinary wire screening. It is described by Mr. F. L. Washburn in these words:

"The upper oval part (C) serves as a receptacle which the flies enter through the opening in the top of the middle portion (B) made of screen and shaped like the roof of a house. Under this is the baseboard (A) upon which rests two bait-pans. All three parts are held together by the hooks at each end, as shown. The space between baseboard and middle portion (between A and B) is about half an inch, and between this and the bait-pans, through which space flies enter pans, is about one fourth of an inch space. Fig. 2 on Page 6 shows a cross-section of the trap, the arrows indicating how the flies enter the bait-pan and then ascend through the opening above into the large receptacle.

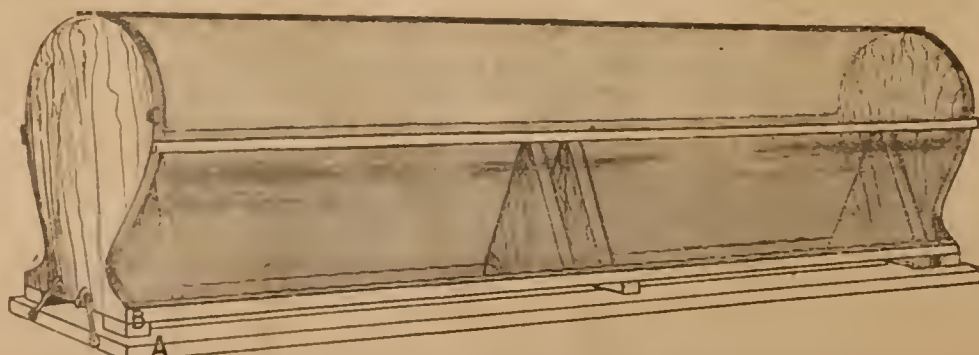
One of these traps caught 12,000 flies in a day. A different trap on a similar principle fastened in a stable window is said to have caught thirty-seven and one-third quarts of [CONCLUDED ON PAGE 6]



The house-fly
Greatly magnified



The stable-fly
Greatly magnified



The Minnesota fly-trap, one of which caught 12,000 flies in a day

Agricultural Colleges—Gateways to the Cities

College Graduates Want to be Professional Men, and Professional Men Want Farms

By Charles Dillon

THREE young men, graduates of agricultural colleges, asked for jobs in the Department of Agriculture at Washington. They had had four years' training. They were farmers' sons. Particularly, they wished to know what their salaries would be if they were employed.

"If you pass the Civil Service examination and stand high enough for us to get your names, we will start you at \$1,200 a year," said W. J. Spillman, of the Office of Farm Management. "Then we will give you about three years' training before you will begin to be of any value to the Department."

Naturally the college graduates were a bit dismayed.

"But," said Mr. Spillman, "if you will return to your fathers' farms or to farms of your own, operate these farms for three years, putting into practice there all the good things you have learned in the agricultural college and show me at the end of three years that you have made good, that you have made these farms worth more than ever they were worth before, we will start you in the Department at \$1,800, and your pay will increase rapidly."

The young men decided to take Mr. Spillman's advice, but one of the three said that at the end of three years he expected to be making more money from his farm, following Mr. Spillman's advice, than the Department of Agriculture could pay him, and therefore he did not expect to return. The other two were not so sanguine; but they were going back to try the three years' actual farming, holding in reserve the chance for a possible place in Washington.

Mr. Spillman did not intend to discourage students of agriculture in the big colleges. "About half the information you gained in college," he told the graduates, "is useless unless you actually engage in farming and learn to apply it. I do not wish to discourage you or to give you the impression that I undervalue college education. That would be absurd, because for years I was myself a professor in an agricultural college and have been connected with several such institutions. What I want to convey is the fact that your four years of studying agriculture are not likely to be worth anything to you at a desk. You must go to the land and use it. No farm editor writes his paper at his desk. He must be with the farmers in the fields. No woman could successfully teach housekeeping and other branches of domestic science if she did not herself keep house and cook and do real work with her own hands.

Fifteen men of wealth wrote to a friend on the faculty of the Kansas Agricultural College asking him to get managers for their farms. This friend had not given the subject any attention. He had not thought of students of agriculture in that way. After a careful investigation he wrote the men of money that the agricultural college was not turning out farm managers, but was only preparing young men to become managers of farms in time, after they had had the experience that a lawyer needs after he leaves college and before he is of any value to a client.

This letter amazed the men in the cities. They questioned earnestly whether their friend was not injuring the college with such writing. But the professor was right. Agricultural colleges are not primarily for the purpose of making farmers or farm managers. It has even been asserted by very thoughtful men that these colleges are doing much to turn young men and young women from the farms.

Observe the Whereabouts of the Graduates

It is to be expected that many persons will take issue with this view, but the general trend of thought in the educational world, and an examination of the whereabouts of graduates of these agricultural colleges, will show to the satisfaction of any open-minded investigator that a very large percentage of the finished students actually seek out some occupation in life away from the farm. This view may as well be studied now. Some persons believe that the enrolment of agricultural colleges will continue to grow even to ten thousand and fifteen thousand. This is scarcely possible. Experience shows that parents will send their boys and girls only a certain distance to college or to school. Probably fifty per cent. of the students at Harvard live within a radius of one hundred miles of Cambridge. The Kansas Agricultural College, quoting it in this instance merely as an example, receives few students from the western part of the State. This is not because the fathers and mothers in the western counties do not put the proper value on education, and it is not because they are not financially able to send their boys and girls to college. If the State had a secondary school of agriculture the enrolment would almost certainly go beyond one thousand in two or three years.

There is a valid human objection to going far from home for nine months in the year. There is also a human certainty that boys and girls are likely to become weaned from the less comfortable life of the average farm and to assume with natural eagerness the conveniences of large towns or near-city life. This is shown in an interesting way at every agricultural college—students in such institutions being, it must be admitted, somewhat different from the class of students enrolled in most of the universities.

It may be that all are good American stock, with equally respectable ancestry; but the boys and girls who come to the agricultural colleges have had few of the easy things to which the university boys and girls have long been accustomed. A freshman at the agricultural college arrives very often with unpolished shoes. He has not learned to visit the barber at regular intervals. His sartorial tendencies are perhaps a bit peculiar. His ideas, as might be expected, are somewhat restricted—his viewpoint, anyway. In the sophomore year a transformation is noticeable. He is much smoother. He speaks more easily. Association with persons of his own age has done much to improve him. In the junior year he is a still much more presentable item in society. And in the senior year he has taken on the dress and most of the ways and mannerisms of the near-city citizen.

College has Changed Him and His Ambition

He is polished and whisked and shaved and shorn regularly. He gives much thought to his linen and his scarfs. He no longer affects absurdities in dress except those absurdities that seem essential to the typical college graduate. He has learned that ready-made clothes were made to fit everybody and nobody, and he no longer wears fire-gilt jewelry.

Four years of college have made a new man, and the folks at home have long ago made up their minds that William is to be employed in the Department of Agriculture, or he is to be an instructor in the college,

of study in one half the high schools in Minnesota, in twenty-five elementary schools and is being introduced in the rural schools.

The fundamental problem in trying to teach agriculture is the training of teachers, who have a broad, practical knowledge of the subject, and who have also the genius to impart properly the information relating to farm and rural life so that the work of the school connects itself with the work of the farm and with farming as a pursuit.

It must be realized that agricultural colleges are rapidly becoming professional schools. By this is meant schools to serve the same purpose in agriculture, scientific research and investigational work that the normal schools serve in providing teachers for the every-day ward schools and high schools. In other words, the agricultural college of the near future will make professors of this and of that; it will provide scientists for the departments of agriculture and for the county colleges and high schools; it will make competent teachers of agriculture for rural schools.

Agriculture must have these experts, but the farms and the farm homes must have men and women, and these men and women must have the opportunity to receive instruction that will increase their earning ability and at the same time teach them how to spend this increased income to improve the whole system of rural life.

"Agricultural colleges are not for the making of farmers," said President Henry J. Waters not long ago. "We must get closer to the farm with instruction in agriculture if we hope to keep the boys and girls on the farm."

The country has to realize that in the last fifteen years, or possibly eighteen years, agriculture has taken on an entirely new significance, new importance, new interest, and that it has attracted to it a new class. It is scarcely possible now to enter any big hotel, any club, no matter how exclusive, any big convention of business men, no matter what their particular branch may be, without finding men deeply concerned in farming.

We now have what may properly be called a city farmer. The wealthy men who asked their college friend for farm managers belonged to this class.

Not long ago I visited a magazine editor in Chicago. Before he would listen to the purpose of my visit he insisted upon telling me of the troubles he was having with his apple orchard on a two-hundred-acre farm. "Everyone who can scrape together the price,"

said this editor, "has a farm. He may not operate it, but he hopes some day to live there and occupy himself with the things in which he believes he will be interested."

In one week I received letters inquiring for information on certain subjects pertaining to farming from the president of a large street railway company, from a corporation lawyer who has an annual income of more than fifty thousand dollars, from four newspaper men, three of them managing editors, and from two preachers. This class can serve a fine purpose. There is no better farm in the South than that owned by Thomas F. Ryan, multimillionaire, in Virginia. This man has spent much money in clearing his land and in making the soil workable.

The City Dweller Wants to be a Farmer

It is as smooth as the prairies of Kansas twenty years ago. Not a stick or a stump is to be seen. The buildings are not expensive, nor are the fences costly, but everything is painted and kept in repair, a constant example to neighbors having less money, for these neighbors can at least emulate, in a smaller and less extravagant way the good examples that Mr. Ryan sets. Enter the home of any of these city farmers, and you find in the library high-class periodicals touching on things outside the city's grime.

All of which leads up to this conclusion: From the farthest time every man, perhaps, has cherished a hope that some day he might finally reach a delectable place of peace and quiet and freedom where life would be more worth living. The strong paradox is found in the eagerness of boys and girls to rush away from the very things that most men and women are longing for, in the busy centers toward which these boys and girls are traveling. The land of freedom for most men, whether they be men of means or merely men with the courage to save, is a farm and a home and independence.

An investigation of the county recorder's office in a county having a large city would disclose an amazingly large amount of farm land owned by city men. This influence in agriculture must be reckoned with. It can be a mighty power for good. This class can be a fine help in building up a better system of rural living.

By example it can change, in time, the architecture of the country in the rural places. It can encourage co-operation of many kinds, particularly in the matter of live-stock breeding, and it can give a commendable dignity to agriculture and prove to the boys of the farms that it is a great business to be seriously undertaken.

These reflections are apart from the original thought having to do with [CONCLUDED ON PAGE 11]



A class in electrical engineering. Every man from the farm, but they won't go back

or he is to be a grain-inspector, or he hopes to be a lecturer in the extension department of some college, or he finds employment with some big implement house.

It takes a strong, determined character to withstand the allurements that are inevitable to college life. It is only human to expect that the boy would much prefer getting up just in time to slip into class at eight o'clock. It is so much more pleasant than turning out at four or five to milk a dozen cows. Even if the farm home be equipped with easy chairs, electric lights, a bath-tub and furnace, it nevertheless is still an isolated place, and the boy's vision goes far beyond the hills that surround it. "Not all of us," said some thinker, "would walk life's homeland way; far o'er the hills the unseen calls the heart. Youth hears the summons sweet and no more stays to play in lowly fields an humble part."

The agricultural colleges of Wisconsin and Minnesota have demonstrated to the satisfaction of most educators that agriculture must be taught on the farm or as near the farm as possible. The idea is being carried out in several counties in Kansas where the high schools have become, in fact, little agricultural colleges. In these it is possible for the fathers as well as their sons and the mothers and daughters to obtain the instruction needed in their work.

It was in recognition of the peculiar necessities of the case that Kansas has arranged a secondary school of agriculture in which the course of instruction will be only three years in duration. This secondary school will have nothing to do with the agricultural college proper, and it will not be a preparatory school.

It will be a school in which farmers' boys and girls may learn all the elementary things of agriculture and home-building, housekeeping, sewing and cooking in three years, cutting out all the frills that have been deemed superfluous. These students may continue one year longer in an intermediate course and then be ready to enter the agricultural college. They will have learned in the secondary school the things they would have studied in the high school, and yet to that high-school course has been added expert instruction in agriculture.

Agricultural Colleges are Really Professional Schools

A careful reading of educational reports and of the newspapers shows that many States are accepting this view of agriculture and the mission of the agricultural college. This is shown by the fact that agriculture is now being taught in rural schools and high schools in many States. This is true of Kansas, more recently Pennsylvania, and to a greater or less extent in Minnesota, North Dakota and Utah. It has found its way into the normal schools of Kansas, Minnesota, Missouri and many other States.

Agricultural training is now a part of the course

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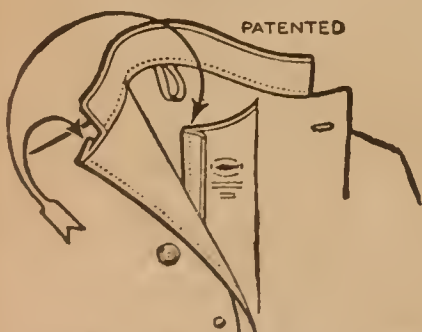
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To Keep Rolling Door Closed

THE sketch shows a simple, handy and effective way of keeping a rolling door shut without hooking or using a wooden pin or spike. It also saves cutting a handhole in the door and the trouble of reaching through and hooking each time. Many farmers have such a rolling door. The illustration explains itself. Notches are cut or filed in the track so the two pulleys fit in nicely. This is a very handy device.

DANIEL S. MICKLEY.

A Battery Kink

NEARLY everyone who owns a portable gas-engine ignited by batteries is troubled by having the battery-connectors broken in the course of time by the vibration. This trouble can be overcome by removing the batteries and tightly tying them together. I have tried crowding packing between, but with little success.

CLIFFORD E. STERNBERG.

Two-Way Gate-Stop

GET a tough slat (A) eight to twelve inches long, according to the size of the gate. Near one end cut a square notch one inch deep and a half inch wider than the thickness of the bottom board of the gate. Bore a small hole through the middle. Nail a block or two on the end (B) for weight. Make a stake like C. Lay a board edge-wise in the slot to strike on, and drive into

the ground a few inches in front of the place at which you want the gate to stand open, and deep enough for the gate to pass over into the notch. Put a spike or bolt through at D. To release the gate raise the end (B) of the gate-stop with the toe.

D. A. McCOMB.

Patching for Tar Roofs

OCASIONALLY there is a place on the farm where it is necessary to use a tar or tarred-paper roof. These roofs are likely to develop holes in weak places or where the laps come. We have tried numerous remedies for patching these holes and cracks and have found nothing better than a piece of fairly heavy cloth from an overall or jacket, cut a little bigger than the hole. Cover entire patch and the roof around the hole with tar. It will make a serviceable patch and is easily put on.

R. E. ROGERS.

Wanted—By Authorities—The Fly

[CONTINUED FROM PAGE 4]

flies at the first catch. Another trap in a stable window caught five quarts of flies, ninety per cent. of which were these deadly stable-flies. Entire families of flies are guilty of vagrancy and ought to be put in these screen jails. They are also wanted by the health authorities for spreading disease-germs. They are wanted now, and the traps which have been mentioned in this issue will serve as special agents to bring these vagrants to time.

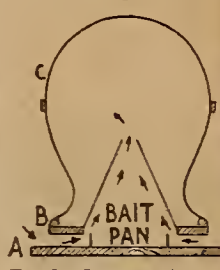


Fig. 2—Cross-section of Minnesota fly-trap

Ways of Getting the Best of the Fly

By A. F. Bonney

WHEN the head of the United States Bureau of Entomology called *Musca domestica* the "typhoid fly" he did more to attract attention to the nature of this deadly insect than all that has been heretofore written, and the indictment is good; for this fatal disease is peculiarly adapted to transmission by flies, because the disease-germ, the *typhococcus* is expelled from the human body with the waste matter on which the fly revels, gets its feet loaded with the germs and may carry them for miles, as they will the germs of all other infectious maladies.

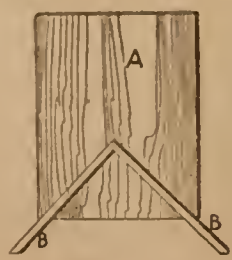
It is now known as a scientific fact that if man does not kill the fly, the fly will kill the man, and while it is manifestly impossible that we exterminate the pest, and that the flies will not kill off the human race, it is equally evident that we may destroy millions of insects with but little effort, while a single fly may bring a fatal disease to an entire family. Therefore, let us do all we can, and thereby save many lives.

Fight the pest! Do not let one stay in the house, particularly in the dining-room. Screens are cheap, and their use adds to comfort and health. Do not let the slop-bucket be a breeding-place for them. A tight-covered garbage-can will prevent much of this evil. Remember that the fly is a child of filth, lives on filth and breeds in filth, and that means manure of all kinds, decaying flesh and vegetation and, in fact, all forms of corruption. They visit such things during the heat of the day, then swarm to the house at night, and the next morning are on hand to walk on bread, cake, meat and sugar. They wade in the butter and bathe in the cream.

The fly also visits the sickroom, and thousands of cases of tuberculosis, cholera infantum and infantile paralysis can be traced to it.

To Make Fly-Poison and Fly-Paper

Prevent the fly! How? First by being clean. Destroy all filth about the place, screen the privy-vault, keep fly-poison in the room, have a bin for the manure and keep it covered, burn all waste matter, destroy all garbage, screen the house, keep poisons or sticky paper about to kill or catch such as may elude your vigilance. Both are easily and cheaply made. For the poison paper use a teaspoonful of arsenite of potassium to a pint of water, soak paper in this, and dry for future use, or put



The strips form legs

some of the mixture in a saucer with a bit of sponge, paper or cloth. Cover all other dishes containing moisture, so that the flies must drink of the poison mixture.

The sticky paper is really the cleanest and most efficacious, and is prepared as follows. First get some heavy wrapping paper, and paint one side of it with a thin solution of glue in water, and when it is dry coat with a mixture made as follows: In a dish put a teaspoonful of castor or raw linseed oil, and put the dish in boiling water; next add rosin which has been broken into fine pieces, and stir until you have a mess as thick as molasses. Paint the prepared paper with this mixture, and the paper is ready to use. Pieces scattered about the house will catch many flies. I often coat pie-plates with the mixture.

A Home-Made Fly-Trap

Fly-traps are now very common, but the price is high in many cases, so I give here directions for making one that will cost almost nothing.

Cut out two pieces of lumber (A) any thickness, six by ten inches, and to them nail strips (BB) half an inch square. This will call for four strips, each six inches long and meeting at a point on the board about three and one-fourth inches from the bottom edge.

Next cut two boards, each eight by ten, and nail to the others to form a box, with the cleats inside. It will be now seen that the projecting strips form legs.

Next cut wire window-screen to fit loosely on the strips BB, but narrow enough so that a crack is left where the pieces come together at the top. This must be wide enough so that a fly may go through easily.

Finish by tacking a piece of screen over the top then set the trap over something the flies will seek quickly, such as black molasses, some spoiled meat or vinegar and sugar. They will fly up toward the light, go through the crack, seek the screen above and soon die.

A tool with which to swat the fly is made of a small piece of screen set into a stick of straight-grained wood split for three inches at the end. Fasten with a brad. This costs almost nothing, and is as good as those purchased. I sometimes strengthen these pieces of screen by folding the corners to meet in the center of the piece.



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Farm Notes

Selling Direct—Apples

By Maurice Floyd

NO OTHER product of the soil needs more reform in selling methods than apples. A certain western grower traced a shipment to the consumer in order to find out what that worthy individual paid for his product. This investigation brought to light the interesting fact that the apples had passed through no less than five hands before reaching the consumer, and while the grower had received only eighty-five cents per bushel box for them they had been retailed to the consumer at four dollars and fifty cents per box.

The Consumer Always Pays Good Prices

This is certainly bad enough, but every experienced grower knows that sometimes the raiser receives absolutely nothing for his fruit, while at the same time he strongly suspects that the consumer still pays a fancy price for it. For this reason we have, every season, apple-orchards full of rotting fruit, while the cities are full of hungry people who would gladly buy this product if the price was right.

How to get the producer and consumer together—that's the question.

A few of the more progressive growers have brought this desirable result about by selling their apples direct to the consumer. A good example of this is to be found in the case of D. E. Eicher, of Washington County, Arkansas. Mr. Eicher has not made a startling success of this business, but his trade has grown steadily from a small beginning a few years ago, and for this reason his experience should be doubly encouraging to other growers; for, while all may not be able to achieve remarkable success in this line, surely, with a little business acumen and foresight, a great improvement over the present haphazard methods may be made by the average grower.

Mr. Eicher was a successful business man before he embarked in the apple-

Eicher puts up the regular bushel pack also. It will be seen by this that the business of selling direct is only a side line with Mr. Eicher, for he is an extensive grower; but in time it will be the main line.

While Mr. Eicher has made an encouraging success of this business, he has found one almost insolvable problem—high express charges. These, in many cases, have been absolutely prohibitive; consequently Mr. Eicher has lost many orders which he otherwise might have had. High transportation charges tend to restrict a grower's territory, and this greatly handicaps him in his undertaking. Nevertheless, that it is possible to do a good business even when



The half-bushel boxes, showing attractive packing

thus handicapped has been demonstrated not only by Mr. Eicher, but by progressive growers also. In time we hope that the business of selling farm products direct to the consumer will be greatly facilitated by the inauguration of more reasonable transportation rates than we have to-day, but while waiting for this day to come the enterprising grower need not sit idly by and let business slip through his fingers.

Each year brings a great increase in the acreage devoted to apples, and it is evident that the growers must meet the problem of increased production by better methods of distribution and marketing; and in the solution of this problem selling direct to the consumer should prove of material assistance. By selling direct, the price of apples in the cities may be held down to a reasonable figure, and the small trade of remote districts can be developed. Then too, by offering the consumer a more attractive product at a cheaper price, the consumption of apples may be greatly stimulated, and thus the much-dreaded over-production can be avoided.

The farmer who goes out of his way a few steps to pet or fondle his stock never has to step out of his way to keep any of them from striking, kicking or biting him.

The silo requires more frequent and thorough painting, perhaps, than any other building on the farm. The paint not only prevents deterioration of the structure, but it keeps the cracks, and even the pores of the wood closed up, thus aiding in the preservation of the silage itself.

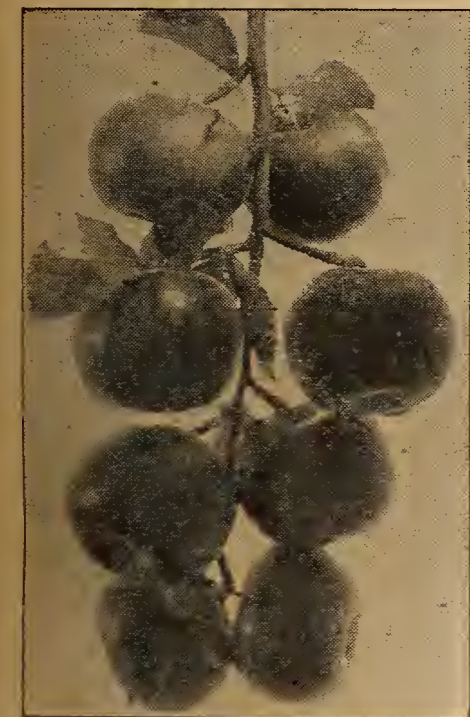
Fatten the Farm with Organic Matter

By Geo. W. Brown

A TENDENCY exists among many farmers to burn up all corn-stalks, loose straw, clover-chaff and superfluous roughage about the place. A lighted torch, a dry windy day, a flame, and the work is easily done. But it is too expensive.

Every time an acre of stalks is burned twenty-one pounds of nitrogen goes into the air and will cost you \$3.50 to buy back again. Wheat or oat straw from an acre contains about twelve to fourteen pounds of nitrogen, and clover-chaff three times this amount.

One can easily figure from these deductions what a reckless loss to the farm is a fire in the chaff-pile or stalk-field. The cutaway and disk harrows will chop these bulky materials up ready for the plow where they can be turned under. If you want to fatten the old farm, stuff it with organic matter.



The consumer pays more for two of them than the grower receives for eight

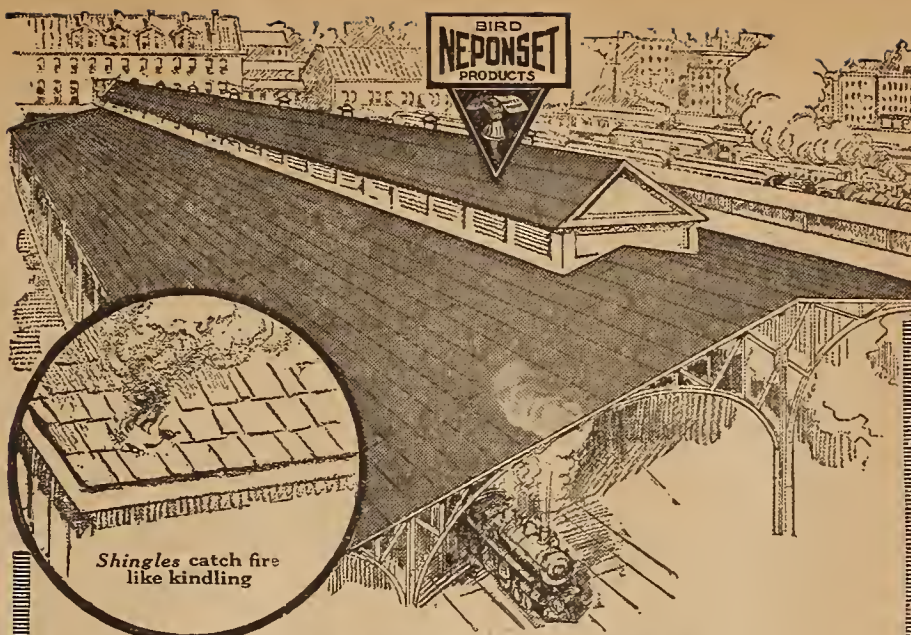
growing business, consequently it was nothing more than natural that he should apply business methods to the growing and marketing of his fruit. This being the case, we are not surprised to learn that he commenced planning for the marketing of his fruit before the crop was raised—in other words, he realized the necessity of furnishing only first-class goods to his customers, and he made sure of this by careful cultivation, thorough spraying and strict attention to the multitudinous details which must ever attend the raising of high-grade apples.

He Used Half-Bushel Boxes

This being accomplished, Mr. Eicher packed his fruit in fancy half-bushel boxes—made by sawing a regular bushel box in two parts and bottoming the upper half—which he sold for eighty-five cents per box, the purchaser paying express charges. These boxes are five and three-fourths inches deep and hold two tiers of Ben Davis and Rome Beauties and three tiers of Winesap and Jonathans. Some of the latter Mr. Eicher wraps in paper and receives a still better price thereby.

The boxes cost eight and one-half cents each, and of course there is some extra work in packing and shipping them, but Mr. Eicher figures that the net profit he receives is far better than the net loss some growers sustain in marketing through middlemen.

Last season he boxed six hundred bushels to supply his trade. Of course Mr.



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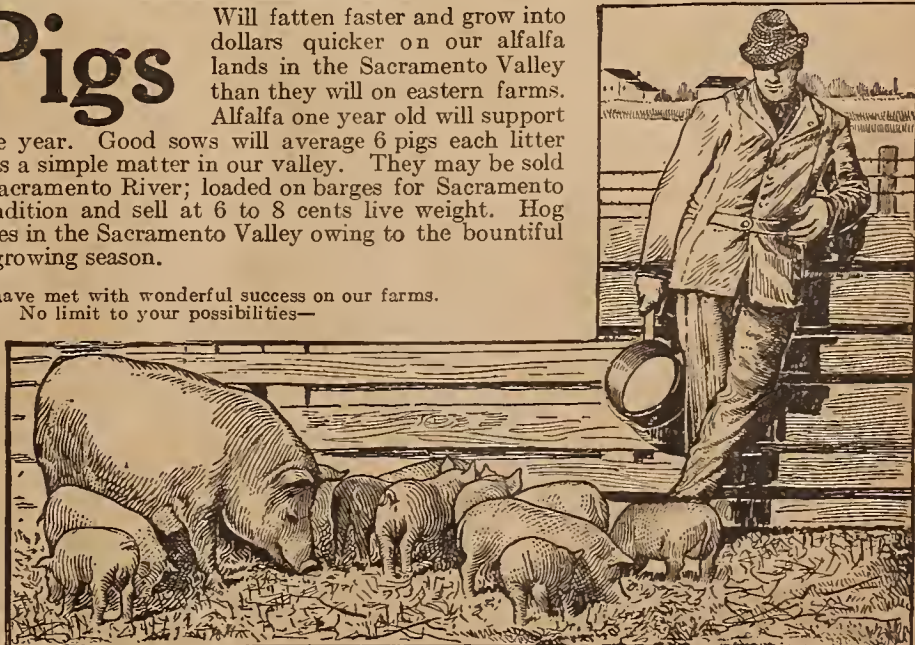
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Crops and Soils

Testing the Sorghums

By C. Bolles

IT IS a commendable trait in human nature to want one hundred cents out of every hundred cents spent. But one must look askance at the too prevalent trait that is looking for something for nothing. It's this spirit of eternally being on the outlook for something great that makes rich men, especially those selling the highly lauded seeds.

Now corn has reached the two-hundred-bushel mark, and at times sorghum has touched the one-hundred-bushel point, but more often corn will run fifty or sixty bushels and sorghum forty—or less. It may not be generally known, but the Bureau of Plant Industry at Washington, D. C., is willing to co-operate with anyone who is willing to give the newer sorghums a fair trial; that is, such sorghums as the Bureau thinks at all suited to the co-operator's conditions. However, they expect that when a co-operator reaches the raising-seed-for-the-trade stage, that it will be sold under its true name and number, and not under a high-sounding one coined for the occasion.

Many of the co-operators throughout the plains are keeping up with the importations and are trying plants but two or three years old so to speak. Now it takes at least five years to tell much about a plant and this much time ought to be spent with it before putting it out as a field crop. Too often the hurrahing begins on the third, second or even the first year of trial. We all know about Shallu and how it was going to do things to Kafir and cane.

Short Trials are Deceiving

Well, it seems that the cheering was premature in that case. Now Kafir has two other rivals. Sudan durra and white milo. Just how long the former has been

on trial we don't know, but we do know about a three years' trial at one place in the Panhandle, and it seems the hurrahing is based on these same trials. Of course it is a good plant, but in calmer moments it will come to earth and most probably find a home in northwestern Kansas and southwestern Nebraska—just out of the sphere of milo and Kafir. White milo has been under selection for the past seven years. It is only of late that a few could make the people hear about it.

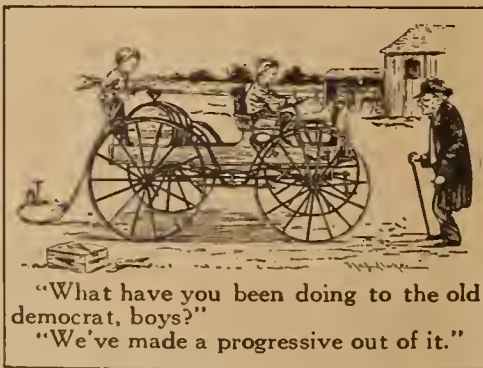
The Kafir-Durra Crosses

There seems to be but very little difference between it and the common red milo, however, and it, like the Sudan durra, will find its place after the noise has quieted down. A third class we haven't heard much about is known as the Kafir-durra crosses. Now the idea in making these crosses was to eliminate the shattering of the white durra (otherwise known as Jerusalem corn) to get an early plant and have a heavy yielder. In reality the two we had on trial this season were almost as late. A dwarf Kafir (or milo) tended to revert to the two component parts and was of poor forage value. The plants grew to a height of from four to five feet, had a stalk and foliage very similar to Kafir and a head like the old-style Jerusalem corn, except the glumes were black instead of white. In yields in 1911 at the Highmore station (S. D.) a Kafir-durra cross made fifteen bushels per acre. In 1912 at a Panhandle station it made slightly over nineteen, and with us the highest was ten—the average eight. However, it was a very poor stand in both our plots. There is probably a place for this set of varieties somewhere, but it is yet beyond the common farmer. Another class more or less tried consists of the kowliangs. Some of them have been on trial for years, while others are new. Just what their ultimate use will be no one knows at the present time. One, the dwarf, judging from one or two years' trial, is going to give milo a very close race in parts of Kansas and Nebraska. The taller varieties seem more adapted to conditions farther north. A three-year-old is Sudan grass. This is a twin brother to Johnson grass, only it hasn't the bothersome root system of the brother. The idea of this grass is to come in on the applause when the pastures are the shortest in the summer. No one can know the outcome until it is given further trial.

Dwarf Kafir-Corn Shows Promise

About the best thing that has been unearthed in the newer sorghums is a dwarf Kafir-corn; it is a sport of the old well-known black-hulled Kafir and grows to a height of four or five feet. It is as early as the common milos and from one to two weeks earlier than the commercial brands of Kafir. At the Hays station in western Kansas this variety, planted May 25th, was fully ripened by September 25th, when the first frost came. This variety combines a heavy yielder with an abundance of foliage. The estimated yield of the Hays station's dwarf Kafir for the seventy-acre field as a whole was forty bushels. Even if it makes but the amount of the Sudan durra or another grain sorghum (thirty bushels per acre) it is certainly a great plant. This is the first year, we believe, that this crop has been grown on anything like a field scale, although it has been under trial for several years.

I have given the newer sorghums so that the readers may know beforehand what to look out for. This sketch is based chiefly on my own tests for three years past.



Tilling Wisely and Well

By William Johnson

"I'll never sow a field again until it's in proper shape," a farmer told me the other day. "Hurrying seed into the ground just to gain a few days' time doesn't pay. Whether it takes one dragging or ten, I'll have my soil in condition—loose and dry on top, moist and firm beneath."

That farmer has been doing some thinking. The object lessons that every season brings have taught him a fact or two that is going to make his granary more useful. The last couple of seasons have been particularly generous with object lessons. If we read them right, we will get a little sermon on tillage direct from headquarters.

It is going to be a fortunate farmer who takes that sermon to heart. We would like to put it differently if we could, but it is a fact that a lot of the things we do in the name of tillage are mighty inefficient. It

should not be so. In a large sense, tillage measures the size of the harvest, and the farmer who tills carelessly is measuring out a harvest that will make the hum of the thrashing-machine sound like the death-rattle of his independence.

I know that springtime is a high per cent. hurry for the farmer. There are so few bright days for the amount of work that must be crowded into them, and they do not stand long on the order of their going either. There is a temptation sometimes to plow land that is over-saturated, to seed when the soil is a bit too wet, or leave a field rather more loose or lumpy than will be well for the crop. When a temptation of that kind comes to you, give it a swat with the big fact that good crops are only the other end of good preparation. It is the cream of much truth, that unless we till the best we can we will not grow the largest crops we might. A crop is willing enough to grow. Growth and yield are nature's law. But we must supply proper conditions, and it takes the right amount of tillage at the right time to do it.

The Soil Needs Ventilation

Last spring was composed largely of untimely rains, and I saw grain sown on soil so sticky that it clogged the drill. It is hardly necessary to say that such sowing was a failure. A good yield would have been more than a yield. It would have been a miracle. The grain germinated weakly and made a sickly growth that simply could not resist the hot, dry weather which came later. I remember particularly a field of peas that looked especially poor. Two weeks after they came through the ground, they were about two inches high and the yellowest pea failure I ever saw. There were other fields of peas, as well as other grain that looked very little better, and the prime cause was an over-saturated soil.

"The land is 'pea-sick,'" some said, and while that may have been a way of expressing part of the truth, it did not explain why much other grain looked just as unpromising. The soil needed ventilation; it needed in many instances a return of the elements that had been yanked out of it by continuous cropping; but fertile or not, a soil without air is Easy Street to failure in growing crops. This is especially true of the leguminous crops which draw their nitrogen-supply from the soil air, but it is true enough with any crop to play a lot of havoc where it is overlooked. Anything in the plant line needs nitrates, and nitrates are not made without air.

With a whole sky full of air over our fields, there need never be a shortage of it in the soil. A humus soil properly tilled will always contain a sufficiency, providing, of course, it has proper drainage to insure porosity. But we do not want too much air in the soil, as is certain to be the case with a loose, open seed-bed; we get a drying tendency then, and fluctuation of soil temperature, together with imperfect development of plant-food; and the crop always says that a combination like that is deadly.

If some of those fields that were plowed or sown so hurriedly last spring had been allowed to lay a little longer, it would have proved that delay is not always dangerous. Careful plowing then, or more surface tillage on that already plowed, and the season's expenses would not have made the profits look so much like a smashed dream. It was the crops that were sown later on soil worked at the crumbly stage that produced at all, though it was a poor year for either. But as one farmer expressed it, "That later sowing didn't miss any growing weather anyway, and it escaped a lot of setbacks that would have told on its vitality." That may or may not be true of this growing season; it depends on the particular brand of weather we have to fit our methods to.

There Should be no Mistakes

But whatever features the season presents, it will smile on correct and thorough tillage. At the last analysis that binful of grain sifts down to a hair root nursing, a film of dissolved fertility from a soil particle. Making the soil cougeal to those hair roots and developing that fertility is the part that tillage plays. It provides a deep, mellow seed-bed, fertile and moist, compact and porous, a seed-bed where bacteria and sunlight, and all those chemical actions on which a profitable crop depends, are carried out without a hitch. We are dealing with mysterious processes and delicate operations, farming, and care must be an every-day utility. Think of it! We roll over a brown furrow and put a handful of seed into it; all summer long sunshine and breeze fondle the green leaves that spring to life; pearly drops of rain and dew bathe them. All the laws of earth and air conspire to mold from that brown furrow, in this beautiful way, the bread that gives us life. Do you think we should ask and not do our part? It is just as noble as it is necessary to till. We will do it, too. Clear the air of hindrances. Give Guess-see and May-be a whirl into the middle of last century, call on nature's magician, Humus, and follow his mellowing touch with the modern might of scientific fact and implement. No mistakes, for "The hand that guides the farm machinery is the hand that feeds the world."



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Poultry-Raising

Concerning the Guinea-Fowl

By Anna Wade Calligher



JUDGING from the inquiries which I have received from various parts of the country, poultry-raisers are becoming interested in the guinea-fowl. Under favorable conditions the guinea is a profitable fowl; under ordinary conditions there is less profit in guineas than in other poultry, because they are rather difficult to raise, and their eggs are too small for market purposes.

A Substitute for Pheasant

A good demand for young guineas now exists in nearly all of the large markets. Old birds never sell for as good prices as young ones. During the fall and winter months a plump young guinea brings from forty to sixty cents in large markets, while in small towns guineas are sold by the pound, live weight, and they bring much less. For this reason we have never raised guineas very extensively for market purposes, but we know of others who raise these birds in large numbers for high-class hotels and cafés, where they are served as pheasants. The guinea is an excellent substitute for this wild game-bird, which is so rapidly disappearing. The flavor of a plump young guinea is equal to that of our native pheasant, and the guinea is quite easily fattened.

The guinea-fowl is a native of warm climates and needs to be well protected during cold weather, especially when there is deep snow. If they are allowed to wander through the snow they are likely to fly into a tree or onto the roof of some building and stay there until they nearly starve.

Keep Guineas Separate from Chickens

Therefore, whenever the weather is very cold, or when a snow-storm is approaching, the guineas should be confined in a comfortable house. Any good poultry-house that is suitable for chickens will do for guineas. But we never keep guineas housed with other poultry. They are very abusive to the hens, especially at feeding-time.

However, the raising of guineas as a "side line" need not interfere with other poultry. Unless one is sure of a good market, it is better to begin in a small way. An exclusive trade can be built up in large cities that would be impossible in smaller towns. It is also possible to dispose of surplus eggs in the same way, although they will seldom bring as much as hens' eggs.

The guinea-hen is not a winter layer. Most of her eggs are laid during the spring and summer months. Guinea-hens usually lay several clutches of eggs before they set. They are poor setters and should never be permitted to sit on their eggs. Sometimes several guinea-hens will lay in the same nest. If they "steal" their nests, as they frequently do, they usually lay a large nestful of eggs, and if they set on them only a few guinea-chicks will hatch. Therefore, it is a much better plan to use either incubators or hens. If incubators are used a few hen eggs should be placed in the incubator after the guinea eggs have been set for about a week. We have found an advantage in this, even when the guineas are hatched with hens.

Use Good-Natured Hens

The young guineas are very wild at first, and the chicks help to teach them how to eat. They will soon learn to stay with the hen, however, without the chicks.

We try to select quiet hens to set on the guinea eggs. The eggs have very thick shells, and sometimes the young guineas



A practical poultry-house suitable for either chickens or guineas

have to be helped out. This would be rather a difficult proposition where either guinea-hens or ugly hens were doing the hatching.

When part of the eggs fail to hatch in a reasonable length of time after they are pipped, we carefully pick off some of the shell so that the young guineas can free themselves. Like young quail, the little guineas are very active and are able to get out of the nest almost as soon as they are hatched. A young guinea is about half as large as the average chick when hatched.

The best time to hatch guineas is during June and July. They cannot endure much cold. They may be hatched as late as September, but require more care.

From twenty-six to twenty-eight days are required for hatching the eggs.

When the young guineas hatch put the hen and brood in a large, dry coop or house, with a yard enclosed with door-screen or boards. If half-inch netting can be had it will answer, but one-inch netting will not do. The young guineas can easily get through. They are wild, and if allowed to escape from the hen they will hide in the grass, and being so small are difficult to find.

We feed young guineas in about the same manner as turkey poult, only oftener. During the first few days they are fed a little every two hours. Dry bread, either moistened with sweet milk or crumbled finely and mixed with chopped lettuce or onion tops, will give better results than boiled eggs. We think the latter causes hewer trouble in young poultry. When guineas are about ten hours old they should have their first food. As they grow older they do not need to be fed as often. When two days old we begin to lengthen the time between meals to three hours, and later to four. We continue to feed a little four times a day until they are placed in a larger yard when they are a week old. We vary the ration occasionally from the start, using oatmeal, corn-bread, boiled or soaked millet-seed and cracked wheat. Pure water, clean, coarse sand and chick-grit are provided.

Sometimes a little of the sand is sprinkled over the feed until they learn to eat it. Be



Floor plan of poultry-house. A, door; BB, inside doors; C, feed-box; DD, nests; EE, windows; FF, roosts; GG, gable windows

sure that the sand is dry and clean. Guineas, both young and old, should have plenty of range. They eat various bugs and insects, but are not destructive to crops. When guineas have a good range their feed costs but little. As a rule, the cost of feeding the old birds is about half as much as for hens. They require the same kind of feed in winter. In summer they require the same kind of range as turkeys.

We like the White African guineas better, than the Pearl. They begin laying rather late in the spring. White guineas bring the best prices.

Chick Safety in Hot Weather

By John L. Woodbury

EXTREME hot weather is a worse foe to chicks of from two to four weeks old than extreme cold. They should never be left at that age after June comes in without accessible shade, as the day may suddenly turn hot, and a few hours' exposure will often upset the condition of a whole flock, if it does not kill some outright. A double row of grain-sacks hung on the netting affords very good shade. They may be pinned on with fivepenny nails in a few minutes so as to stay all the season. Cold water dashed on them in the heat of the day will add to their effectiveness. It is a good plan, during long dry spells, to turn down a few pails of water in the yards. After it settles away the chicks will be seen burrowing luxuriously in the moist earth. Another help, especially in sandy yards, is to spade up the soil frequently. This not only adds to the coolness, but if a little grain be worked into the dirt a lot of wholesome exercise may be got out of the youngsters. By little extras like these I carried my chicks through the record-breaking hot wave of 1911 practically without loss, while my neighbors lost theirs by dozens and even many of their adult fowls. I was careful to have the drinking-water always in the shade, and renewed it frequently, turning out each time any of the old found in the vessels.

Outdoor brooders are to be preferred in warm weather, but chicks can be reared in the indoor kind after one gets the hang of it. One great secret is to keep doors and windows of house wide open night and day. I have tight-fitting screen doors and screens for windows of my houses to keep out the rats. Then I have screens exactly fitting into tops of brooders, for I never close the lid of an indoor brooder in hot weather. If the night promises to grow a little cool I cover or partly cover the screen with a grain-sack. I find this works much better than closing the brooder tight and blowing out the lamp or turning it down low. Another point is not to run temperature of brooder too high. Ninety degrees in hot weather is equal to ninety-five degrees in cold. If the thermometer rises to eighty degrees in the building, blow out the lamp and throw brooder wide open, otherwise some of the chicks may form the habit of "steeping" in the heat, when they soon become worthless.

Some breeders take excellent care of their early chicks, but leave the later hatches pretty much to look after themselves. This is a mistake. Of course there is not the danger from cold in the case of the warm-weather chicks, but there are other dangers equally great, if not quite so apparent.

When Hens do the Best

By Mrs. Margaret Statham

THE writer has grown from a baby to a woman in the company of chickens. She has read a great deal of poultry literature, good and bad. Much has been merely repetition. The following conclusions have been reached and tested by personal experience.

For the busy farm wife a small flock is more profitable than a large one. It is agreeably surprising to see how many eggs and chickens may be produced from a few hens.

The raising of chickens upon a small scale is not difficult; as the business grows, complexities grow. Apparatus, knowledge and care naturally keep pace with the growth.

Common sense teaches that lice, filth and dampness are fatal to young chicks.

Feed and shelter are the two principal financial problems. Experts discuss, pro and con, the value of different feeds, wet and dry. The writer has always fed such as the farm produced, using as great a variety as possible, for her observations have convinced her that chickens will thrive on anything they like, provided it is not fed exclusively.

Different sizes of birds must never, never be fed together for best results. Neither should chicks be allowed to get wet in feeding or drinking.

For separate feeding, and dry, clean roosting-quarters use coops that are well ventilated, easy to clean and vermin-proof.

The Catbird

By H. W. Weisgerber

I RECALL one summer afternoon, while hoeing in the garden, of having a female catbird fly over the fence and alight on the ground almost at my feet and pick up the worms and small insects that she could find. I honestly believe that she was the most distressed-looking wild bird that I had ever seen. Whether she had been sick or had grown thin by brooding the eggs too long, I know not; but it hardly could have been the latter case, unless the nest had been despoiled, for she did not carry away any food, but swallowed whatever she found.

I stood still, and she came still closer, and I then noticed an appealing look in her eyes that moved me to pity the poor creature. It was real pathetic. I stopped my work and let her gather what food she needed. Poor bird! For who could tell what trouble had been hers?

The catbird has rightly been called the northern mocking-bird; and so it might



well he, for its size, shape and coloring so nearly resemble its more gifted southern cousin that the name well applies. Having never heard the mocking-bird, I cannot judge as to musical ability; but the catbird, while a gifted musician and mimic, is not the polyglot that the mocker is. But if anyone doubts the musical ability of the catbird, just let him get out early on some May morning, and all his former doubts will be at rest.

Although the catbird sometimes does considerable harm by destroying small fruits and berries, the bird cannot be considered injurious. On the contrary, in most parts of the country it does far more good than harm. Outside of the small fruits, which consist mostly of wild berries in our eastern States, the catbird feeds upon destructive insects.



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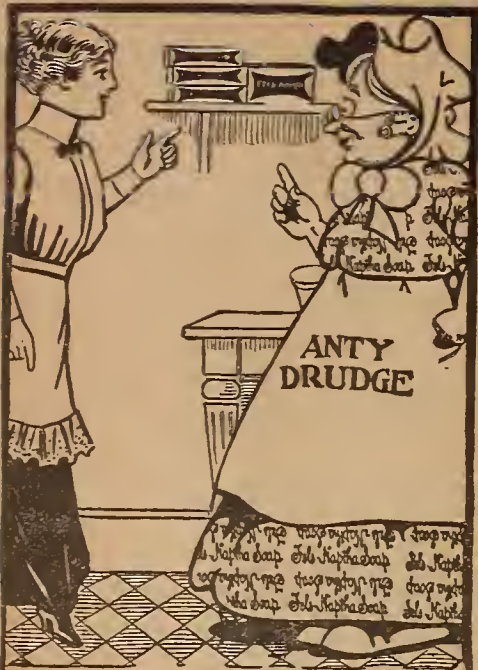
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GARDENING

By T. GREINER

Better Potatoes

CAN we get better potatoes? Yes, and more of them too. And there is no great secret about the ways and means of getting them. To grow potatoes of highest quality and high percentage of starch contents, we must select high-quality varieties, and by care and culture give them normal development up to full maturity. This means that the soil must contain all the elements of plant-food in the required amounts and proportions; that the foliage must be protected from injury by insects and diseases, and that the tubers are allowed to come to full maturity before they are dug. Varieties differ greatly in point of quality. Early Ohio and its offspring, Ohio, Jr., Beauty of Hebron, and especially Freeman, are among our standard sorts of high quality. I know of none better in that respect than the last mentioned, and usually plant a patch of this so as to have an ideal baking potato. The Ohio is also a much better potato than most of our later standard sorts. It is one of the earliest, yet one of the best keepers.

The most potent factors in determining the yield of potatoes, I believe, are the season with its sunshine and rains and its varying temperatures during the period of growth, things beyond our control, and then a lot of things we can control, namely: the soil conditions, the proper condition of the seed-tubers, the size of the seed-pieces, the thoroughness with which the growing crop is attended to by the grower from planting-time to harvest and, finally, the selection of a heavy-yielding variety or strain.

The most important point, however, has yet to be mentioned. It is not particularly a new point either. The late and lamented Professor Goff, who had made a name for himself while horticulturist of the New York State Experiment Station (Geneva), found that he could greatly increase the productiveness of any potato variety by continuously selecting the best yielding hills for seed. Any grower, without making any other change in his methods or management, can within a few years' time increase his annual potato yields fifty per cent. by growing a patch of potatoes purposely for seed, picking out and storing for seed, in proper manner, all the hills that give a nice, even lot of tubers and the heaviest yields, and discarding all others. I have for some years grown my Early Ohio seed-potatoes in this way, and now also started in with the Freeman. This "pedigree" seed is surely giving a better yield, and decidedly a more even-sized lot of tubers, few if any small ones being among them. The size of the individual tubers is much influenced by the size of the piece that was used for seed, or by the resulting number of sprouts. We can raise larger tubers if we allow only one stalk to grow, and consequently but few tubers to set, than if we have a dozen stalks and several dozen potatoes set on them.

Every reader of the FARM AND FIRESIDE who grows potatoes, even if only for home use, should put this matter to the test. Think of this when you harvest your early potatoes in July or August. When you dig up a nice hill that gives an extra heavy yield of nice, smooth potatoes, nearly of even size, put them aside or gather them up separately as you dig them, and store them in shallow crates, properly labeled, to make sure that you will have them in best condition for planting when spring comes around again. Thus you will raise three bushels in future where otherwise you would raise two. And if you will thus save only a half-dozen hills you will get a start, a start in a new and right direction, and added interest in your garden and potato-patch.

From the Strawberry-Patch

To have a full supply of the strawberry, this most luscious of all fruits, during the entire season, and year after year, in fact all the family may want, is an achievement well worth considerable effort. It is sometimes practicable to run a bed for more than one fruiting season. With the Gandy, a late and often profitable variety, although

here one of the poorest of all for canning, it is often advisable to fruit this old patch a second time, as the second crop may be better than the first. Under ordinary conditions, however, the right thing to do is to set a new bed every spring. It is hard work, almost impossible sometimes, to reclaim an old strawberry-patch that has once been allowed to become overrun with weeds. A hundred good plants set in spring and properly taken care of will give you your full supply, and possibly more. A corner in the home garden will be a good spot for it, and used thus to better advantage than if planted to potatoes or cabbages. A neighbor last year had a bed consisting of five rows, the rows four feet apart and about twenty feet long, making about one one-hundredth part of an acre. The plants had been set early and allowed to make runners enough to nearly cover the entire ground, only foot-wide paths being left clear between the rows for convenience in picking. When I examined this bed toward end of the fruiting season more than a hundred quarts of berries had already been picked, the rate of yield greatly exceeding ten thousand quarts per acre. Of course there was not a weed to be seen in the patch. It is easy enough to keep the weeds out of a small patch in the home garden. The weeding can be done at odd spells, but must be attended to in time. It is very satisfactory and a source of much pleasure to have such a weedless, attractive strawberry-patch in one's garden.

Getting Enough Plants

Perhaps you have neglected to plant that patch this spring. Last year I had neglected to plant as many as I desired to have. I would have been a little shy of berries this year. So at the end-of the fruiting season and as the runners began to start on a young plantation I filled pots and paper plant-boxes with nice, fibrous loam and sunk them into the ground near the older strawberry-plants in suitable spots to layer the first runners. The patch was given a good watering from the hose connected with the hydrant, and the runners took good hold of the rich soil and soon filled the pots or boxes with thrifty roots. At a favorable time the plants were taken up and planted in a new bed in the garden. I set them about a foot apart, the rows being the usual width of four feet apart. Most of these plants produced new runners; but the old plants themselves have made a wonderful growth this spring and are well loaded with fruit-stalks, blossoms and fruit. I am not expecting the quantity of berries that I could and would get from plants set in spring. But the berries are immense in size, and the patch was easily kept free from weed growth. A heavy mulch of coarse litter (mostly marsh-hay, the very best material for that purpose) covers the ground all around the plants. The variety is Brandywine, one of the best for our strong loams, a large berry of good quality, not bad for canning either. It is easily recognized by its unusually large calyx. We always pick it with the stem, as the core pulls out easily, leaving a hollow spot inside the berry. This variety is a free plant-maker.

I still have the old Wilson. It is grown to some extent for market in this vicinity. Many of the professional strawberry-plant growers do not even mention it in their catalogues and price-lists. Yet it has never been surpassed, that I know of, as a canning berry. Ask the good housewife about it. She will tell you: "Give me the Wilson." But Brandywine, Ozark, Senator Dunlap and a host of others are better table berries than the Wilson.

Everbearing and Fall-Bearing Strawberries

For some years I grew a little patch of the Alpine bush-strawberry because it seemed pleasant to have, now and then, late in July and during August, a cupful or two of the spicy, wild-flavored, high-colored, elongated little berries, luscious to eat at that unusual time with a dash of sugar and some good cream. I also tried the several French "everbearing" varieties catalogued by some of our seedsmen. But I have given them all up, including the Alpine. The yield of fruit is so light that this type of strawberry might almost be called "neverbearing." But we now have real fall-bearing sorts: the Americus, Superb and Model. They are no good for June bearing, however.

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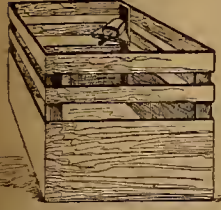
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Live Stock and Dairy

Practical Lamb Nursery

By M. Duckett, Jr.



IF THE shepherd has a weak or an orphan lamb that must be raised from the bottle, and neither he nor his wife have the time to feed it, a simple way to overcome the difficulty is to make a box eighteen inches wide, two feet high and two feet long. In one corner of box put a shelf inclined at an angle of thirty degrees, and to this tack a can about an inch larger in diameter than the bottle you feed lamb out of.

Tack a stout cord to one end of shelf and have a loop in the other end of cord. Put bottle inside of can, give cord one turn around neck of bottle, and fasten loop in cord over a nail at other end of shelf. The lamb will do the rest.

This box also comes handy for a sick hen or pig, and kept near the kitchen door will be found useful for many purposes.

Teasing the Horse

By C. E. Davis

TO TEASE any animal is unwise, and even dangerous. Animals never forget. You have doubtless read the story of the "Pope's mule," that laid up a kick for seven years until her tormentor returned, and then the huffet was so-o-o terrible that they saw the smoke of it from afar.

I know of two little boys and an old family mare, not an unusual combination on most farms. This old mare has often been teased by one little boy, and when he comes near she lays back her ears, and with flashing eyes and snapping teeth tries to get at him. Some time when he is off guard perhaps the chance will come, and who knows what will happen?

The other lad always petted and played with the old mare and talked to her, and she will come to him and follow him about anywhere. When she is hitched up he can drive her any place, and she obeys every word he says. But he never teased her, and she shows her gratitude in her only way.

Teasing Ruins an Animal's Disposition

Teasing colts, horses or other dumb animals shows a streak of hidden meanness and should not be permitted. It also spoils the disposition of the animal; and it would be utterly useless for them in after years to try to do anything with the embittered animal and expect entire success. Brute force may compel obedience for a time, but how much better to have them act from motives of affection rather than fear.

Worms in Horses

By Dr. A. S. Alexander

THE presence of worms in horses always means contamination of water, hay, grass or other feed by the manure of horses harboring worms. Dirty watering-troughs, feed-boxes, mangers, stall floors and old horse-pastures, marsh-hay and low, wet grazing-grounds are the common sources of intestinal worms.

Bots are the grubs (larvæ) of the horse bot-fly (*Gasterophilus equi* and *G. hamorrhoidalis*). The eggs are deposited upon the legs and chest of the horse and taken into the mouth and stomach. The bots do comparatively little harm, do not cause colic, do not rupture or "eat through" the walls of the stomach and cannot be killed by medicine. Any drug strong enough to kill bots in the stomach also will kill the horse. Bots pass out of the body when horses are on grass in summer.

The variety known as *G. hamorrhoidalis* is pink in color, sometimes hooks onto the lining membrane of the rectum when leaving the body, and when that occurs may set up irritation and possibly colicky pains. Rectal injections of soapy warm water and tobacco decoction, or tea of quassia chips will speedily end this trouble. Short white pin-worms occupy the rectum, set up irritation and so induce pawing, stamping and rubbing of the root of the tail. The injections just mentioned are effective for the destruction of these worms also. Medicinal treatment is not needed.

Symptoms of the Ascaris Worm

The most common worm of the adult horse is known as *Ascaris megaloccephala* and is white in color, eight or more inches long, round and tapering at each end. If present in large numbers they cause indigestion and malassimilation of feed, characterized by yawning; harsh, staring coat; tight, dry hide (hidebound); depraved appetite; licking of lime, earth and walls; eating soiled bedding, wood and other "foreign objects," and presence of a fur of scaly substance around the rectum. To

destroy these worms a mixture of two parts of salt and one part each of sulphur and dried sulphate of iron may be given in tablespoonful doses night and morning in dampened feed to an adult horse for a period of one week; then skip ten days, and repeat. The medicine is repeated to kill the fresh brood of worms which hatches from eggs in the intestines. For a pregnant mare omit the iron and increase the other ingredients. Iron tends to cause abortion.

The "Blood" Worm is Most Injurious

The most injurious worm, and one little understood by farmers, is known as the "blood" worm or "palisade" worm (*Schlelostoma equinum* and *S. tetracanthum*). It is a minute, blood-red and blood-sucking worm which attacks the lining membranes of the intestines and also the blood-vessels (mesenteric artery, etc.), causing dilatations (aneurisms) of their walls.

These worms mostly infest young, growing colts grazing on old, contaminated or low, wet pastures. They sap the life-blood, and the colt becomes weak, thin, "pot-bellied," wobbly, bloodless and lifeless. The membranes of the eyelids, nose and mouth will be found blanched (pale). The badly infested colt generally succumbs and may die from rupture of a blood-vessel. The recovered adult horse having aneurisms is subject to periodic colic. There is no satisfactory treatment.

Colts should graze on new, clean pasture and at all times be generously fed. As a preventive they should have free access to rock salt and to a mixture of equal parts of dried sulphate of iron, sulphur and ground gentian root made palatable by addition of salt.

Cause of Lolling Tongue

By Dan Sidenstick

I NOTICED in a recent issue of FARM AND FIRESIDE that a Colorado reader desired to know if there is a remedy for lolling tongue. Few people know the cause. I gave two dollars and fifty cents to have my horse cured. The cause is this: The molar, or jaw, teeth become sharp and irritate the side of the mouth. Sometimes the flesh is lacerated. The mouth becomes hot, and the horse puts the tongue out to get relief from pain.

The cure is: take your horse to some good veterinarian, have the molar teeth filed down smooth and even, and have him give you some healing wash to swab the mouth until the sore places heal.

If properly done, and the mouth becomes healed, you need not fear that the horse will loll the tongue. The so-called "lolling bits" are a waste of money, as their effect is only temporary.

Medicine-Chest for the Barn

By Paul H. Ruess



EVERY farmer should have one of these combination writing desks and medicine-chests in his barn. One in the cow-stables and one in the horse-stables will do very well. It

should be very securely fastened about waist high on the wall or on a shelf in some convenient place, and kept closed when not in use. It will save many a trip to the house for a sheet of paper, salve or liniment. It is much better than to have one thing here and another there.

A convenient size for this chest is as follows: eight inches thick, eighteen inches high and twenty-four inches long, although it can be made any size desired. It should not, however, be over nine inches thick, unless you have plenty of space. It can be divided into many compartments.

Hauling Hogs in Hot Weather

By M. Coverdell

SINCE there are many hogs lost every summer while being hauled to market, one should make arrangements for such hauling in advance. Not only the hot weather, but the jolting about of the animals in the wagon causes them to worry and overheat themselves.

Bolster springs on the wagon in which hogs are marketed will greatly diminish the danger from jolting. Next, the floor of the wagon-box should be covered with leaves or litter of some kind and thoroughly dampened with cool water before starting on the trip to market. If all but the lower box of the wagon can be constructed of slats, similar to a fence of boards, a free circulation of air is established, which is of great assistance in keeping the hogs cool.

After these precautions have been taken, make sure that you do not crowd the wagon and smother some of the fatter animals; then cut some green brush with heavy foliage, and form a canopy over the load of hogs, to protect them from the broiling sun. Hang a bucket on the wagon, and stop occasionally on the road to market, splashing some water over the animals and on the litter. Where the hogs are pretty hot, however, it is well to be careful in applying the water.

Women and Horses

By Warren F. Wilcox

I SHOULD like to sound a word of warning to all farm women: "Learn how to hitch up and unhitch a team."

Just the other day I saw a woman undertaking to unhitch a team. How do you suppose she began? She first let down the neckyoke with the tugs or traces still fastened to the singletrees. Careless woman! Little did she realize how easily the horses might start something that would end disastrously.

All of us men have had some experiences, when we forgot to unfasten the tug on the far side and went and let down the neckyoke and started to lead the horses away; how that tug, unfastened, drew along the rig. We have all had those times of forgetfulness.

Now, with all four tugs fastened and the neckyoke down and a fractious team and the woman starting back to unfasten them and the team starting up, what is going to happen? Just about everything that is not pleasant.

You may say, "Oh, there is no use for me to learn; I will never drive enough to pay." But you may. Some time you may have to unhitch the team, and once is plenty enough to know how. Every husband, father and brother should see to it that every woman, sister, wife and daughter on the farm knows how to harness, unharness, hitch up and unhitch, not to say drive, tie and all the other things incident to handling horses.

Any man who has endeavored to straighten out a harness that an inexperienced woman has taken off will appreciate what I say. I have had that experience trying to assemble a harness taken off by a woman who did not know how, but who proceeded to unbuckle and unfasten every place where straps could be separated. I guess every man has had the same experience.

Every woman on the farm should learn these things. Insist that the men take time and demonstrate the different things so that if ever occasion demands you will be equal to the emergency.

Women who drive should learn how to hitch a horse. Let the men folk who must do such work show the women who ought to know how, and then they will be ready and equal for all emergencies.

Agricultural Colleges—Gateways to the Cities

[CONTINUED FROM PAGE 5]

the future of agricultural colleges, and yet they are associated with that thought. It is important that the country see to it that we do not fall into a system controlled by landed gentry. We want no peasant class in America. We want more landowners farming their own land, one-hundred-acre farms for instance, producing food for the people; we want a rural credit that will make it possible to wipe out tenantry, and we want more county agricultural colleges. When these wants are satisfied we shall have done much to keep the best-born on the farms, and the agricultural colleges, as professional schools, will be providing teachers and experts to equip the smaller schools.

Imagine a company, manufacturing wire and ornamental iron and such things, employing several men, ten years ago, to write about agriculture and lecture about it. Imagine the big farm-implement companies, ten or fifteen years ago, maintaining departments of service and publicity in the sole interest of farmers. Imagine the bankers paying for seed-corn and seed-wheat and giving it to farmers in order to improve the crops in the bankers' surrounding country.

Imagine the magazines ten or twelve years ago sending men out especially to investigate and write special articles on agriculture. All these things are done to-day. One of the most successful railroad men in the United States gives at least one half his time to agriculture and good roads. B. F. Yoakum, chairman of the executive committee of the Frisco Railroad, James J. Hill of the Great Northern, E. P. Ripley of the Santa Fe, H. U. Mudge of the Rock Island; all of these men give their personal attention to agriculture, and these railroads maintain departments of agriculture in which experts give all their energies to improving the farming in their respective territories. It was not very many years ago that there was no Secretary of Agriculture. He was a commissioner and was not sufficiently important to be in the cabinet, but it is very doubtful if any portfolio to be disposed of by President Wilson attracted more attention than that of the Secretary of Agriculture, and many persons openly declared it to be one of the most important posts in the government service.

A business so dignified and so filled with import to every man and woman and child on earth holds fine possibilities for him who undertakes it carefully and intelligently and with the determination to do his best. This is why some of the deepest thinkers in educational America are giving most careful consideration to the future usefulness of the agricultural colleges.

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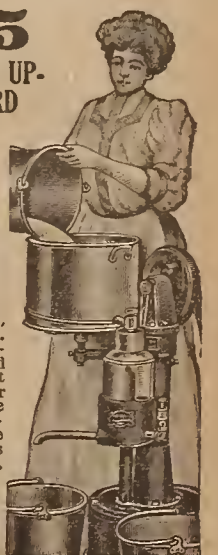
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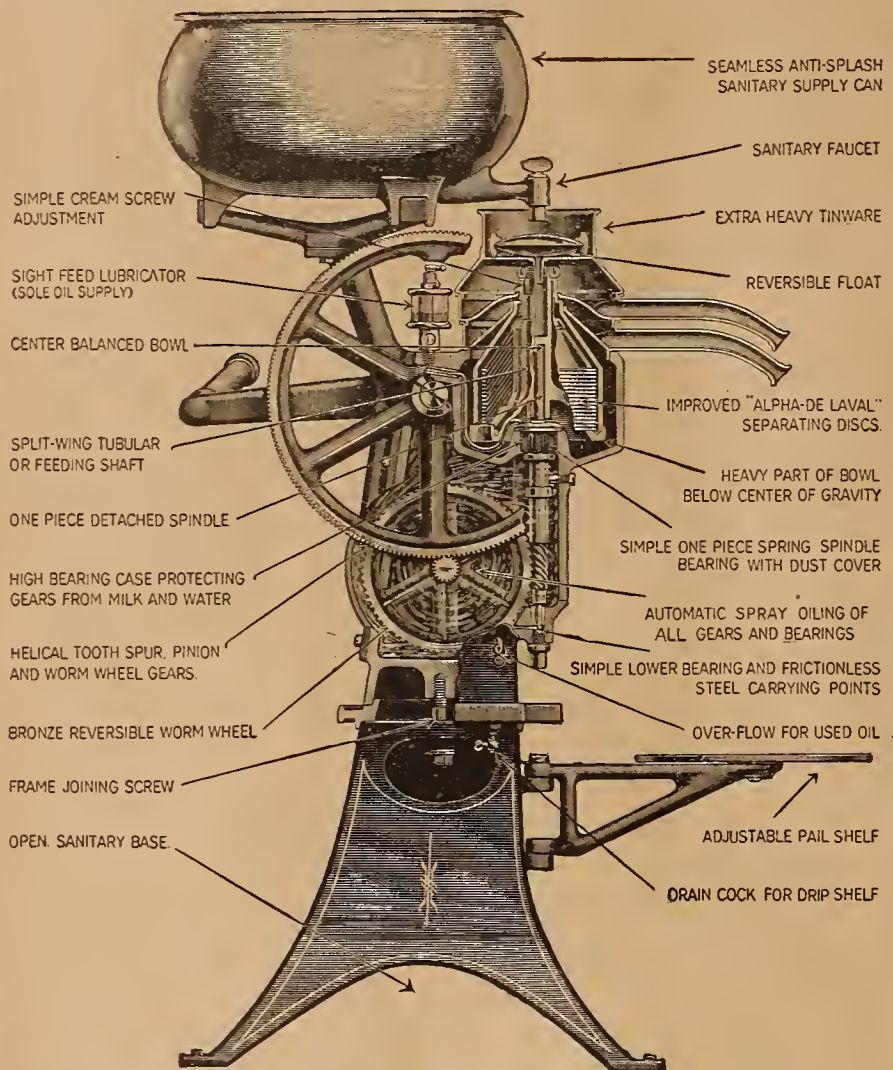
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The Market Outlook

Heavy Marketing of Hogs

By L. K. Brown

EVER since the scare in the cattle market there have been heavy receipts in hogs. Prices have about been maintained since their drop, and the market has been healthy. The packers have been heavy buyers, showing that they are in need of the hogs, and that there is a profit in it. The demand for meat and lard has been maintained and offers an outlet for all that is in the supply.

At eastern points there has been a run of local hogs, cutting the shipping demand at western points, which has been the cause of much of the drop in price. With the disappearance of this and the return of shippers, prices will have a tendency to advance, provided supply at western markets does not increase.

The packing interests have for some time been forecasting a June slump. It has been so widely published that many have taken it for granted, and probably the continued heavy May marketing has been the result of an effort to dodge it. The increased number of 225-pound stuff on the market would seem to indicate this action. It is possible that this clean-up during May will prevent the June slump, as the receipts may be lighter.

Compared with one year ago, conditions are decidedly different. At that time the packers' cellars were full of cheap meat, the receipts were rather light, and these killers were boosting the market so as to dispose of their stocks at a higher price. To-day their cellars are almost bare, the receipts are rather heavy, and the packers gather in all the hogs they can, and at as low a figure as possible. It is a good deal of a case of market manipulation.

While recent weather has been favorable for the pig crop, many early litters were lost, and many litters are small, so that the number of pigs is about the same as one year ago.

The provisions-market has moved down with live-hog prices and is healthy on the new basis.

Sell at Your Own Time

By W. S. A. Smith

THERE has been, all through the month of May, an undertone of unrest among cattlemen—a feeling that even with an allowed shortage of cattle the market might slump. The consequence has been that the market has at times had more cattle than necessary, and we have had sharp breaks of from twenty-five to fifty cents per hundredweight followed by sharp advances the following week. Cattle are on such a level now that packers evidently do not care to buy more than is actually necessary for daily needs. David Harum says, "It's a fool who sells at the top," and I guess he is pretty nearly right. Hanging on for the last nickel and overstaying the market has ruined many a man. I have always been and always will be, in favor of playing the game safe when it can be played safe. So when the cattle-market was lively about the middle of April I contracted 350 head of 1,100-pound cattle to one of the packing companies for \$8.75 locally, to be delivered on or before June 15th at Sioux City. At the time these cattle were contracted they were worth on the local market about \$8.35, so that with sixty days' more feed \$8.75 was not an unreasonable price. The large majority of the stock-yards talent seemed to think I had made a great mistake in contracting. However, when the market broke ten days afterward I began to receive fewer condolences. What the market will be by June I know not, but hope it will come back

and the cattle be worth the money. The point I wish to make is this: that no man can tell you when to sell your cattle. The time to sell must be decided by you, and you alone. If the cattle are making money think once. If they are losing money think twice. The keen edge has now gone off stock cattle, and I fully expect to see lower prices from now on, as the quality coming to market is very poor, and quality cuts quite a figure with this class of cattle. There never has been so much trash sold as this spring at very high prices, and I often wonder how the buyer figures his prospective profits. Crops in western Iowa will be planted late, owing to an excess of moisture and a cold, late spring. This, however, can be very quickly made up by a few weeks of warm weather. South Dakota, which has suffered for two years in its western part for lack of rain, has this year abundant moisture, and everything points to good crops.

Meeting the Market Demand

By John P. Ross

DURING the past month fluctuations of from twenty-five to seventy-five cents have been rather frequent in the sheep-market, and buyers have sometimes been able to have their own way, being helped out by the prevailing dullness in eastern markets, and by the fact that feeders in Colorado and some of the Western States, with a view to closing out for the season, were sending in quite a large amount of stuff, often of poor quality. Still, through all of this, the prices of sheep and lambs have never fallen below a point which could fairly be considered as satisfactory. Though trade has at times been slow, yet a market has been found for everything offered.

Shearing has been general, and shorn stock in good demand, relative prices having been about as follows:

Wooled lambs—light, choice ..	\$8.25@	\$8.60
Wooled lambs—heavy, choice..	8.00@	8.25
Wooled wethers—choice	6.25@	7.00
Wooled ewes—choice	5.50@	6.50
Shorn lambs—good	7.00@	7.75
Shorn wethers—good	6.00@	6.75
Shorn ewes—good	5.00@	6.00

A heavy run of lambs from Kentucky and the South may lower the market somewhat. Genuine spring lambs are few and far between.

An association has been formed to promote the more general consumption of mutton and lamb. Their endeavors are worthy of success; but, since the American is dainty as to the quality of the meat he eats, it would be well for them to start, also, a propaganda among the farmers to impress upon them the need of improving the quality of the sheep and lambs they breed and feed. If we are to be inundated with a flood of frozen meat—though that is hardly likely to happen—we are blessed with several millions of people from southern and eastern Europe, and even from Asia, who will be delighted to get it, if it is only cheap enough.

Provisionally, however, there is still left among us sufficient of the American type to consume all the choice legs and loins of mutton and lamb we can produce, and to pay for them liberally, and it is going to be up to our farmers of many or few acres to see that this praiseworthy taste should not go unsatisfied.

Quality Goods in Demand

The conversion of the ranges having closed out that great source of our sheep supply, the field of endeavor in that line is thrown more open to the farmer. To reap its full benefit he must be prepared to produce the goods of the highest quality; and there is but one way to do it. There are hundreds of men giving their best knowledge, energies and means to the importing and breeding of the very best types of mutton-and-wool sheep to be found anywhere in the world. It would be invidious to name any of them here, but their flocks are well known, and their breeding rams and ewes are sought for eagerly by up-to-date sheepmen. But this is not enough under the changed circumstances, under which the consumers of sheep-meat have so greatly increased in numbers, while the supply of sheep has diminished.

It has become necessary that every man who desires to keep up the fertility of his farm, and to earn his share of the good prices of live stock, should keep a flock; and whether it consists of twenty-five or of five hundred ewes he must avail himself of the efforts of the men above spoken of, cease to be content to breed scrubs, and be willing to pay the necessary but very moderate prices at which their pure-bred rams can now be bought. By doing this even if he can only afford to start in with grade ewes, he can, by retaining the best of his ewe lambs and carefully mating them with rams of the same type (a little inbreeding will do no harm), in two or three seasons own a flock of which he may be proud, and make more money out of the investment than he will out of any other product of his farm.

Now that the lambs are going to grass keep a sharp lookout for scouring. Don't stop their grain ration too suddenly.

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The FARMERS' LOBBY.

Why I Don't Look for Hard Times

By Judson C. Welliver

country a lesson. It will hurt some people directly, and some others indirectly. If they're hurt badly enough there will be a sharp reaction against everything Democratic, and that reaction will cause the pendulum to swing back toward the old high-tariff program of the conservative Republicans. That will be our chance. Why should we sweat here all summer and fall, passing a currency bill whose real purpose is to act as a pneumatic cushion for business to light on so that it will not know how badly it has been hurt by the tariff revision? What we want, the thing that will help our cause, is to have the tariff revision get the full credit for all the harm it may do. Then folks will get their attention centered on that issue, we will make our fight on it, and the country will swing back into our control where it ought to be.

Therefore the extreme high-tariff wing of the Republicans is not much in favor of rushing currency legislation into the statute books on the heels of the tariff revision.

The progressive element of Republicans and former Republicans are in a different situation. Those who have thus

far stuck by the Republican party think their course has been vindicated by the party's defeat last November. They believe they could reorganize the party back into something like its old solidarity, if they could only get the chance.

Here is the Chance for the Republicans

SO THEY are demanding that the old element, the element that always opposed Roosevelt and Rooseveltism, retire from control and turn over the machinery to the progressive crowd; to the people who are represented by LaFollette, Cummins, Borah, Bristow, Norris, Murdock and the rest of that group. They believe that if the present national committee, which is controlled by the conservative wing, would call an extraordinary Republican national convention, just for the purpose of party reorganization, it would be possible to accomplish that reorganization, to put the machinery in the hands of the liberal element, and to give the country some acceptable assurances of purpose to keep in touch, in future, with the currents of real sentiment.

That much accomplished, these advanced Republicans think that they could coax back into the party a large proportion of those who supported Roosevelt last fall, could hold those who supported Taft, and, if times really get close following the enactment of the tariff, would have a chance to make a good fight in the congressional election next year.

Now let me explain the precise difference between the conservative and

the progressive Republicans. The conservatives, the men like Boies Penrose and Murray Crane, think that things are going to get so bad that the country will be rushing pell-mell back into the arms of the high-tariff wing. They think the Payne-Aldrich bill is going to get a vindication; at least, they hope so. And they say, "If things are going to swing back to our policies, why shouldn't we be there to welcome 'em? Why should we abdicate just when the crown is being polished up to fit our head? No; we'll postpone this abdicating business; we'll wait and see how things go."

Before attempting to say what I think is going to come of all this complication, let one word be interjected as to the

present attitude of the Democrats on the tariff subject.

The commonest expression one hears in Washington, among the men who are putting through the tariff measure, is that of misgiving. The Democrats don't have the courage of their tariff convictions as they used to have it in the days when they were in opposition. They are fearful of the results of their revision.

The Tariff, a Source of Trouble

"WILL we have hard times?" is the query the average Democrat addresses to you. When a word of cheer is returned, your Democrat is likely to shake his head and dejectedly observe that "You know, the tariff has always been our Jonah." The truth is that there are more protection Democrats than anybody would have believed a very few years ago. The South is full of them. They have been standing by their party, fighting to get back into power, all the time fearful of the results if they succeeded; dreading the responsibility, but standing by the traditional party policy.

A western Republican of the progressive persuasion, a man who voted against the Payne-Aldrich bill and who is also opposing the present Underwood measure, said to me:

"The Democrats are making a bill that I can't support because it doesn't rest on any possible consistent theory of levying duties. But after they pass it, it deserves a fair chance, which it will not get. The elections come too often in this country. Before the new measure gets a respectable try-out, and just while the country is in the worst condition of fear and misgivings over it, an election will come, next year. If the new law could have three or four or five years to prove itself, to demonstrate what it really can do, the country might give a fair verdict on it. But we can't wait that long. The election must come just at the time when, if there is to be any hysteria over the thing, it will be at its height. The readjustment to new conditions will not have been accomplished. At that most unfortunate moment the Democrats will go before the country in the congressional election. If they should lose the House they would become panic-stricken, and nothing would save them in the general election of 1916. Then the standpat, Chinese-wall faction of Republicans would come back into power, and we would have another tariff for exclusion. The cause of real tariff reform would be staved off another dozen years."

That is the view widely entertained by people who want tariff revision downward, but who don't want so much of it as the Underwood bill provides. They fear a reaction that may swing the country clear back to the other extreme.

Now I am going to set down what I think about this situation, modestly and in the hope that if I am all wrong readers will be charitable enough to forget it before the mistake is proved by events, yet with some little confidence and a sneaking

hope that if my guess is right some few readers will remember and give me credit for it.

This tariff legislation is not going to cause a panic or a grave depression comparable to that which began in 1893. There will be some slackening of industrial activity without doubt. It will not last very long or be acute as have the last two depressions. It will be borne with more patience and less disposition

to blame the party in power, because the public is not so ready as it used to be to attribute everything to politics. Let it be remembered that the Republican party had a panic in 1907 and still carried the country overwhelmingly in 1908. Doesn't that suggest that there is less disposition to attribute everything to politics?

Still there will be some depression and some revulsion against the Democrats. They will suffer in the congressional elections of next year. They will lose a good many seats in the House, and it is very doubtful if they will retain control of the Senate, on which their grip is very weak even now.

But—here's more of the same guess—they will not lose control of the House. They will retain it by a good, substantial majority. The Republicans and the Progressives will not have got together, by that time, to a sufficient extent to enable them to put up an effective fight. True, the tendency right now is for them to draw closer and closer together. They are both opposed, generally, to the

Underwood tariff bill. Their common ground in opposition to it brings them daily closer to the possibility of coalescence. No matter how bitterly the progressive leaders may denounce the idea, no matter how insistently

the standpat management may protest that it will have none of the progressive alliance, the fact remains that most of the third-party progressives in the House voted with the Republicans against the Underwood bill, and fought with the Republicans against it. The fact remains, likewise, that almost without exception the progressive Republicans in the Senate will do the same thing.

But, inevitably and surely, this community of opposition will tend to bring the various elements that used to be Republicans closer together once more. LaFollette and Penrose may dislike each other with great cordiality; but when they have spent three months, shoulder to shoulder, heaving rocks at a common enemy, joining in a chorus of predictions of disaster to follow this legislation, they will be a lot more friendly than they were four years ago.

No Telling What Will Happen in 1916

SO, IT seems certain, the tendency will be for the two elements to gravitate closer together. But—and here is the real point, as I view it—they will not get close enough together to make effective common cause in the congressional elections of 1914. The Penrose crowd is not willing to abdicate in favor of the insurgents, and the insurgents are not willing to come back and play second fiddle as they used to do. There will be some pride, some vanity, some plain pig-headedness, some ambition, in it. Also, there will be a sharp realization that, no matter what the leaders might agree to do, the millions of followers can't be picked up and tossed into the common pot so suddenly.

The Democrats, then, will carry the House in the 1914 election by an ample majority; and there will be two years ahead for experiments, for experience with the results of Democratic policies, for all factions to think it over, for new issues to develop, for countless things to happen which must finally decide what sort of a line-up there will be in 1916. Present indications decidedly suggest that a Democratic president will win in 1916; but present indications may be sadly misleading as to what will be the conditions when 1916 comes along. A great business disaster would wipe the Democrats off the political map. A foreign war would pretty nearly insure their retention in office; and in neither case would the election give a fair verdict on their policies and program. Neither the panic nor the war is likely to happen. It seems altogether probable that things political will just sort of wobble along for an indefinite time, and we will have to content ourselves with recollection of Lincoln's observation that the people, "yes, the people wobble; but they wobble right."

WE ARE revising the tariff downward. There will be a measure of industrial and financial depression as a result. Some people will be hurt; some will think they are hurt. Some will think others will be hurt, and still others will think they will be hurt because others will think they will be hurt.

IF, THEN, the harm that actually happens, plus the harm people fear may happen, amounts to anything like a financial stringency, it will be desirable to have the currency in the best possible shape to cushion the shock. Therefore currency legislation ought to go along with the tariff enactment.

The President's Attitude

TO GET back to currency, which the President wants handled just as soon as possible, it is explained that there is a good bit of politics mixed up with the attitude of the President and of all parties toward the currency. The President is said to figure thus:

"We are revising the tariff downward. There will be a measure of industrial and financial depression as a result. Some people will be hurt; some will think they are hurt. Some will think others will be hurt, and still others will think they will be hurt because others will think they will be hurt. If, then, the harm that actually happens, plus the harm people fear may happen, amounts to anything like a financial stringency, it will be desirable to have the currency in the best possible shape to cushion the shock. Therefore currency legislation ought to go along with the tariff enactment."

But here comes a practical difficulty. The aggregation of people that used to be the Republican party, and that now, speaking broadly, constitutes the Republican and Progressive parties, is looking to the future. Whatever the rank and file of these people may think, it is a fact that their leaders, as we find them in Congress, think there will be some business depression following the taking effect of the new tariff. Your stand-patter reasons somewhat thus:

"This tariff revision is going to have a bad effect. It is going to teach the



"Huh! Apples are mighty plentiful this season. Nobody wants 'em"

The Market-Hunter

By Don Cameron Shafer

Illustrated by W. C. Nims

WHITE setter crouched to heel, hammerless shotgun in the hollow of his arm, Douglas Gordon stood in the middle of a carefully kept orchard, beneath a large snow-apple tree, eating the finest apple he had ever tasted. Above his head the leafy branches bent low with the weight of deep red fruit, until the very tree seemed to be bursting into ruby flame. There were six other snow-apple trees in the orchard, each heavy with the red-coated fruit—bushels and bushels of perfect snow-apples.

"And only yesterday I could not buy a snow-apple in the whole city," the youthful hunter muttered to himself between bites. "I thought snow-apples were extinct—their growth a lost art—and here is a veritable treasure-house of them."

It was no trouble to reach the bending branches, and he filled the pockets of his hunting-coat with fine apples, then passed through the orchard to a weather-beaten farmhouse which was nestled at the bottom of that little pocket in the hills, out of the way of the north and west winds, with a little brood of dark-gray barns and outbuildings grouped domestically about it, and fine old maples, shaggy of trunk and mighty of arm, guarding driveway and yard.

It was noon, and the white setter was both tired and hungry after a long morning of tracking the wild grouse in the tangled berry-bushes and in the second-growth thickets bordering the hill pastures. His keen nose told him that there was a lunch in the back pocket of his master's worn hunting-coat, and just why anyone should stop to eat an apple, even if it was a beautiful ruby-and-white color, he could not imagine.

"Come right in," called a cheery voice from the farmhouse in answer to Gordon's knock at the door-frame.

"No, thanks," bowed Gordon as a motherly woman hastened to the open door. "I just want permission to sit on your warm, sunny porch, near this fine tub of running water, while I eat my lunch."

"Come right in to th' table, an' let me get you a cold snack," begged the woman. "We eat dinner pretty early here, but I guess I can find something for you."

"No, thanks; I have my lunch," smiled Gordon, "and I have been helping myself to your snow-apples as I came through the orchard."

Abner Andrews threw down his paper, pushed his glasses to the top of his bald head and came to the door in his blue stocking feet.

"Better let me get you a leetle cider," said he. "I reckon you're tired an' hungry. Find any birds?"

"Quite a few, but couldn't hit them—leaves too thick," answered Gordon as he filled the half of a coconut-shell with the sparkling spring-water. "No cider, please. I would rather have the water. We city folks rarely taste such fine spring-water as this."

"Cinda, can't you find some pie?" called Abner, knowing man's weakness for this delicacy.

"Susan is gettin' it, Abner," called the housewife.

The lunch which came from the rear coat-pocket was very, very light, as befits a hunter of birds who has far to go in this age when game-birds are so very scarce, but it was enough for both dog and man. Cinda Andrews did not think so however, and neither did her husband nor her pretty daughter Susan.

seat upon the porch, and set the glass pitcher down upon a chair within his reach. In another second she was gone, to return presently with a plate piled high with cookies and fruit-cake—and two large pieces of golden pumpkin pie. Setting the plate down beside the glass pitcher, she tossed one of the cookies to the crouched setter, who was watching his master so anxiously and hungrily, but the dog only sniffed at the cake which rolled against his crossed fore legs and turned his black muzzle away.

"Why, your dog won't eat cookies!" Susan exclaimed in surprise. "I never saw a dog before that didn't like cake."

"He is passionately fond of cookies," answered Gordon as he unwrapped the lunch.

"Then why doesn't he eat it?"

"Because he has been taught to eat nothing handed him by strangers—nothing he finds lying about," explained Gordon. "In the city dog-poisoners are all too numerous."

Gordon picked up the cookie and pretended to examine it carefully. When he tossed it to the eager setter with an "all right, old fellow," it disappeared in a twinkling.

"Oh, the city is such a wonderful place!" mused the girl as she stood there watching the dog.

And, lest it strike you as peculiar that she should be talking thusly with a stranger, I must haste to write that such is the custom of the back country where true hospitality to strangers still exists.

"It—it is a fearsome place," answered Gordon as he sampled the pie. "There is happiness there, but more of sorrow; there is pleasure, but more of work; there is joy, but more of bitter suffering; there are riches, but more of poverty, cruel, cruel poverty!"

"Oh," sighed the girl, as she leaned against the vine-covered porch column and stared down the hazy valley, "we of the country know what it is to be poor!"

"But not of the cruel, pinching, deadly kind," answered Gordon. "Here one can always have a home, always enough to eat, plenty of fresh air, freedom, birds and flowers, woodland and sparkling lakes, brooks and trees and hills and—oh! ever and ever so many treasures denied us in the city."

"We are land-poor, here in the country," she explained. "About all we have is scenery and fresh air—money is always so very scarce in the country."

"You require so little money and have so much to sell," smiled Gordon. "We of the city have nothing to sell but the labor of our hands and the product of our minds."

"We have much to sell," she laughed merrily, "but no buyers!"

"No buyers!" cried the young man in surprise. "Why, never before was farm produce so high in the city. There is a great demand for everything from the farm at a fancy price. Fresh eggs are worth sixty cents a dozen, butter is forty-nine cents a pound, and potatoes, apples and vegetables of all kinds were never higher. Only yesterday I searched the markets for a few snow-apples such as I used to enjoy when I lived in the country. I found only a few bruised, wormy, half-grown apples, full of bad spots and bruises, called snow-apples out of courtesy, for which they wanted two dollars a bushel!"

"Two dollars a bushel!" exclaimed Susan, in a tone

"Please, sir," began a soft, pleasing voice behind Gordon. "Please, sir, wouldn't you like a glass of milk?"

It was Susan, tall, lithe and radiantly beautiful with perfect health and vigorous youth. The sleeves of her plain blue calico dress were rolled well up over rounded brown arms, and the neck of the gown was tucked in, displaying a handsome throat and a hint of a soft white bosom. Her cheeks were delightfully pink, and her even teeth of sparkling whiteness. And, ah, me! when she smiled there leaped a winsome, elfish dimple in one pink cheek!

"Why—yes—thank you!" stammered Gordon as he rose to his feet and took the glass in his trembling fingers.

He noted that her large eyes were very, very blue and her abundant hair, sun-kissed and autumn-red, was unlike anything he had ever seen—a nebulous, crowning glory of copper light.

And Susan flushed a pretty pink and white when she poured the milk, insisted upon the hunter's resuming his

that implied disbelief, although the young man was so very serious. "Why, we have bushels and bushels of snow-apples every year and we can't even give them away."

"What?" cried Gordon, his turn to doubt.

"It is a fact," nodded pretty Susan very seriously. "We can never sell early apples. You see, the buyers don't get around until late, if they come at all, and then they only want the winter apples, apples that will keep a long time, the Spitzenbergs, the Northern Spies, the Baldwins, the Russets and the Greenings."

"And all those beautiful apples—the finest apples in the world—go to waste?" questioned Gordon in surprise.

"Yes," she answered, sighing, "because there is no one to buy them. We also have plenty of Red Astrachans, Strawberry apples and Yellow Transparents which we never sell. And no end of Seckel and Bartlett pears and plums which no one ever thinks of buying."

"Whew!" ejaculated Gordon. "And only a little over fifty miles away are three large cities, totaling nearly half a million people, all begging and clamoring for fruit and paying fancy prices for a very inferior article. Whew!"

"But who will buy them?" asked the girl. "No one ever comes here from the city to buy fruit. The local apple-buyers are offering only sixty cents a barrel for apples this fall, and it hardly pays to pick them for that when the barrels cost fifteen cents apiece. The nearest evaporator and cider-mill will pay only twenty cents a hundred for shaken apples. We know from experience that the wholesale apple-buyers in the city will not give us any more than this for our apples."

"No, they will give you just as little as possible, and sell them for just as much as they can get. But there are literally thousands of people who will buy your apples if you can get in touch with them. Thousands of barrels of very inferior apples are being sold in the city every day now for more than two dollars a barrel. Perfect fruit, well packed and graded, should bring much more. The thing for you to do is to get in touch with consumers, not with greedy commission men."

"That is so much easier said than done when one lives so far away and knows not a soul in the city."

"There are many ways," answered Gordon thoughtfully. "The trouble with you country people is that you produce, and then sit down and patiently wait for someone to come and buy your products at his own figure—and if the buyer fails to come your fruit wastes and other products spoil. If you lived near enough to a city to haul your products to market once or twice a week you would find a ready sale for everything at a fine price, and farming could be made to pay as good a profit as any other manufacturing business. Why, do you know, they are selling buttermilk down in the city to-day for six cents a quart on the street and five cents a glass in the cafés! Because you live some fifty miles from the nearest city, you think it quite impossible to market your produce."

"But how could we find those city markets?" cried the girl.

Gordon saw in a flash what really ailed these thrifty country folk, what was preventing them from making a financial success of their plant for the production and manufacture of food-stuffs. They had no salesmen. No one knew what they had to sell. The people who want farm produce and the people who raise it are separated by a wide, wide gulf, bridged only by a few commission houses, whose toll leaves but a meager margin of profit for the producer. The farmer, he determined, ought to get in touch with his market, to feel it, to know its wants, its moods and its rewards.

"How long would a manufacturing plant keep out of the bankruptcy courts if it produced a certain brand of merchandise and did nothing to sell its goods?" he asked to make his point clear. "It would not exist a month. It must advertise in the papers and magazines to let the people know what it has for sale—why its particular product is better than the others. It must employ competent salesmen to go from place to place and sell its goods direct to the retailers. Farming will never be a recognized financial success until it adopts some simple selling method. Every farm needs someone to sell its goods as well as to raise things."

"Look at the fine crop of apples you have this year. If you can get them to the city and in the hands of the housewives they will be willing to pay you a fine price for them, probably enough to net you two dollars a barrel."

After this long speech Gordon looked up and saw that Abner and Cinda had both come out on the sunny porch to listen, but he continued fearlessly—resolved to tell them the horrible truth—to make them take heed.

"One must get out and hustle to sell goods—any kind of goods. It is easy enough to produce things, but it requires skill and hard work to sell the products of mill and factory and farm."

"Do ye mean that I should go down to th' city an' sell those apples?" questioned Abner. "Who ever heard of such a thing?"

"You certainly should," nodded Gordon, "whether anyone ever heard of it or not. Those apples should not be allowed to go to waste. You cannot afford to lose them."

"Huh, nobody'd buy 'em!" snorted Abner. "Apples are mighty plentiful this season. Nobody wants 'em."

"All the more reason for hustling out and selling those apples," answered Gordon. "In the factories of the city they employ men, and pay them good salaries too, just to find and stop the slightest waste, the least little leak. Here you sit idly by and see a season's growth of the finest fruit I ever saw wasted, because you are out of touch with the market. Even while your fruit is spoiling they are selling Oregon apples, of no better grade in your neighboring cities for five cents apiece."

"I am sure it is true!" cried Susan enthusiastically.

The young man smiled at her for this encouragement and continued.

"Now I am employed in the sales department of a large manufacturing concern. Selling goods is my business, and perhaps this makes me too optimistic in this line. I have never sold [CONCLUDED ON PAGE 15]

For Sunday's Reading Hour

Joseph Forgives His Brethren

By Rev. Chas. O. Bemies

Sunday-school lesson for June 8th: Gen. 45, 1-15. Read Chapters 45 and 46.

Golden Text: Behold, how good and how pleasant it is for brethren to dwell together in unity!—Ps. 133, 1.

The Bible, especially in the Old Testament and the four Gospels, is a country-life book. Let us interpret it accordingly. We believe that the Bible is a true record of facts.

JUDAH, the kingly lion's whelp, struck the tenderest chord in Joseph's heart by his masterly plea for Benjamin, and climaxed his magnificent effort by offering to take the place of his brother Benjamin as a slave so that the youngest son might be restored to his father. Joseph felt his pent-up emotions getting the better of him, and he ordered everyone except his brethren out of the room post-haste and wept aloud for very joy.

The greatest thing in the world, love, is an emotion. Heart, not head, rules the world. Religion without proper emotion is a cold-blooded parody. Love to God and to neighbor is the emotion on which hangs all the law and the prophets. Human sympathy is one of the finest of earthly emotions, and we should properly cultivate the emotions the same as we cultivate the brain. When the heart, however, runs away with the head, or the head with the heart, there is an unbalanced man.

The time had come, and Joseph revealed himself in a perfectly natural manner to his brethren with heartfelt emotion. At first they were terrified with fear of conscience and possible vengeance. If he should treat them as they had treated him! But Joseph had thoroughly tested their repentance and brotherly love, now he forgives them as God forgives, wholeheartedly and absolutely. He returns good for evil, and talks reassuringly to them in his and

their native tongue, easing down their sense of guilt by declaring that God had wonderfully overruled their action of twenty years ago to the preservation of them and all the family through him.

'Tis divine to forgive. When repentance and forgiveness weep together the past is dead and buried in a new-found joy. This is the essence of the Gospel: Sincere repentance for the sinner, and absolute and eternal blotting-out of sin by divine forgiveness.

Jacob Before Pharaoh

By Rev. Chas. O. Bemies

Sunday-school lesson for June 15th: Gen. 47, 1-12. Read Chapters 47-50.

Golden Text: All things work together for good to them that love God.—Rom. 8, 28.

JACOB was the first scientific breeder of cattle mentioned in history, and we moderns who know so much haven't caught up with him yet. His son Joseph was the greatest farm-manager the world ever saw. He didn't bother with a paltry one hundred and sixty or a hundred thousand acres of cultivated land, but successfully managed all the farms of the whole country of Egypt through seven bumper crops and seven years of famine and for the rest of his life. Joseph wanted to be reunited to his whole family, but as the famine was deadly in Canaan he could not leave his position as farm-manager, statesman, banker and chief ruler in Egypt to live up there. Pharaoh quickly and voluntarily solved the ticklish question as soon as he heard of the situation, by insisting that Jacob and all the sons' families and belongings should be brought down into the favored land of Goshen, not far from the capital city, in the delta of the Nile.

The brothers were sent back home jubilant and abundantly supplied with provisions, presents and wagons for the children and wives for the return trans-

portation. When they joyfully told Jacob of Joseph and his splendid position and Pharaoh's urgent request that the whole tribe go down to Egypt to live in plenty, he could not at first believe it. But the sight of the wagons and provisions was proof positive, and he renewed his strength, declaring his eagerness to go down and see Joseph. No time was lost. The journey was safely made with all their flocks and herds and possessions, together with all of Jacob's sixty-six sons and grandchildren. As they came into the country, Joseph had them directed into the place of their future abode and went down to welcome them. The meeting between Jacob and the son whom he had mourned as dead for twenty years was deeply touching. Then Joseph told his brethren how to act and what to say when he would present them before Pharaoh.

Joseph knew that his brethren and father would find great favor with Pharaoh because of their occupation. God had met Jacob on the way down and told him that He would go with him into Egypt, and in good time He would fulfil His promises to his descendants. In due time Joseph picked out five of his brethren and his father to be presented before Pharaoh. Noble-hearted Judah and Reuben must have been among the five. They were inexperienced in the customs of the magnificent Egyptian court, with its elaborate etiquette, but these rural folk, unused to city ways, seemed to be very much at ease. Why not? Their brother was the virtual ruler of Egypt! The brethren went through their part of the program without a hitch, and Pharaoh was more than pleased with them.

Then Joseph as a climax introduced his aged father, Jacob. And Jacob, the wandering patriarch of a small tribe, shows his humble but God-given superiority over Pharaoh by pronouncing a heartfelt blessing on the mighty Pharaoh! The really God-filled man rightly feels himself the equal of any man anywhere.

and soon orders began to pour in until even Gordon was surprised and the crop was all sold.

Gordon went up one Sunday to see the apples and to discuss the situation—with pretty Susan!

"Maybe I could buy a few barrels of Spies to fill these last orders!" suggested Abner. "I could get 'em for seventy-five cents a barrel over at Perrill's an' make a nice thing out of it."

"Don't you dare do it," warned Gordon. "Don't you buy an apple. Hundreds of farmers have made that same mistake and lost every customer in that way. You can trust no one to pick or pack apples for you. Apples from another farm might be altogether of a different flavor. A single barrel of poor apples would ruin your reputation in the city. I knew a man who had a nice place to sell his fresh eggs to a city hotel. Whenever he did not have enough fresh eggs to fill his orders he would buy of his neighbors. They did not care whether the eggs were fresh or not—and they were not. He lost his customer, just as he deserved."

"I guess you're right," nodded Abner. "Of course he is right!" maintained Susan.

When the last check was received Abner Andrews adjusted his glasses and figured up his profits. Much to his surprise he had netted nearly a thousand dollars from his orchard that one season. This was more than he had made off his whole place in two years. And he knew that the entire crop would scarce have brought a hundred dollars had it been sold to the cider-mills. And, best of all, when he finished his figuring he discovered that Gordon had made good on his boasted salesmanship and each and every barrel had brought in its two dollars, just as he had promised.

It was a family letter which Gordon received, in which Abner and Cinda and Susan all had taken a hand. They did not offer him a money reward, because they knew instinctively that he would be hurt. They did not tell him what a thousand dollars really meant in their extremity. But they did write of their appreciation, in simple and homely words, assuring him of their thankfulness for his lesson.

"Come up for a few days," wrote Abner in a shaking hand; "the leaves are all off now, and the birds have drawn in from the brush and brambles, and the shooting is fine. Don't wait until fishing-time; come now, and try your hand at the birds."

Gordon took a deep breath as he folded the letter and tucked it into his pocket.

"Susan!" he muttered. "Susan!" The next minute he was hasty getting out his hunting-gear to catch the afternoon train.

The Market-Hunter

[CONTINUED FROM PAGE 14]

farm produce, but I think that I can sell it." Here he looked again at Susan and noted the enthusiasm in her deep blue eyes. "Just to prove that I am in the right of this argument, that those apples can all be sold for a good price, I will undertake to sell them—for a consideration."

"What kind of a consideration?" asked Abner.

"That I can come out here next spring and fish that fine trout-stream which I see you have posted."

"Haw-haw-haw!" chuckled Abner. "You sell those apples for two dollars a barrel, like you was talkin', an' I'll give you that trout-stream!"

"No, I'll just fish it—next spring," answered Gordon as he picked up his shotgun. "You will hear from me in a day or two. Here is my card; investigate me if you like. I shall sell your fruit, but I must insist that you be honest with those apples."

"Honest!" breathed Susan, because she really did not understand how folk could be otherwise.

"We may be poor," answered Abner, "but we've always been honest!"

"One of the reasons why city people would rather trade with their grocer and purchase poor fruit at a fancy price, rather than buy it direct from the farm, is because the farmer has cheated and robbed and fooled them too many times," explained Gordon.

"Why, sir, we never try to cheat folks!" cried Cinda in horror. "Though I've heard as how those things was done."

"I am sure that you do not," smiled Gordon as he whistled to his dog. "Now if you will give me your R. F. D. address I will sell your apples—or never speak of myself as a salesman again."

Early next morning Douglas Gordon was down-town in the market district of his home city displaying samples of snow-apples from the Andrews farm. With his assurance and guarantee that the fruit would be hand-picked and not shaken from the trees, carefully and honestly packed, all of fine size and color, Gordon had no difficulty in securing orders for all the snow-apples the Andrews orchard could supply.

Abner Andrews, assisted by Susan and a young nephew, hand-picked the snow-apples and packed them in new barrels just as Gordon wrote in his instructions. They discarded the wormy and deformed fruit and shipped only the best. Each barrel showed an even grade of perfect fruit from top to bottom. Forty barrels they packed and shipped in this way, hauling them to the nearest railroad station, which

was but four miles away and the haul all down grade, and duly shipped them by freight to the grocery and fruit stores which Gordon specified. Inside of thirty days Abner received his checks which totaled, after the cost of fifteen cents each for the barrels was deducted, a profit of \$80.55, or more than the two dollars a barrel which Gordon had specified.

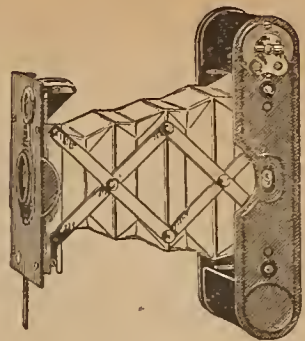
This was a good start, but Gordon still had the fast-ripening winter apples to sell, and he knew that this would be a much harder task, as the delicious snow-apples, with their rich, red coats and juicy, snowy pulp, are always scarce in the market and ready sellers when winter apples are not yet ready to eat.

Apples were plentiful that fall, and the city stores would give only from \$1.25 to \$1.75 a barrel for winter apples, regardless of kind or condition. At first it looked as though Gordon would not be able to net two dollars a barrel for the winter apples for all his rather boastful proposition. But he remembered that he had worked up from office-boy to assistant sales-manager because of his peculiar ability to sell goods in a flooded market, and he resolved to sell those apples—for Susan!

Being well acquainted in the city, Gordon selected the names and addresses of nearly two hundred of the wealthiest citizens, men who had originally come from the farm and who could appreciate a good apple. Then he had his stenographer write a letter to each address, in which he described the flavor and quality, assuring the prospective purchaser that every barrel would be uniformly filled with perfect fruit, such as is generally shipped to England, and offering to send a barrel on approval f. o. b. If the apples were satisfactory they could pay \$2.25 for the barrel. He also gave the freight rate, which was but twenty-five cents a barrel, and the delivery charges, twenty-five cents additional, so that every person could see that a barrel of perfect apples, direct from the orchard, would cost but \$2.75, or nearly the same figure as the city grocers were asking for poor apples.

This letter was carefully worded, nicely written and sent only to men of well-known reputation and standing. While it did not bring forth the results that Gordon anticipated in his enthusiasm he did receive telephone and mail orders for nearly fifty barrels the first week. A few days later Abner and his family filled these orders with the finest apples ever shipped from their farm. Each and every barrel of fruit was as perfect as it could well be. And those who received apples from the Andrews farm in this way were surprised and delighted. They told their friends.

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This is Jasper M. Bellinger, who won first prize at the Better Babies contest at the Oregon State Fair at Salem. Jasper lives on a ranch near Lebanon, Oregon. The Better Babies movement has reached the western cowboy country. Has it reached your town?

How healthy are the babies in your county?

IF ALL the tots between six months and three years of age in your county were weighed and measured, would their average score be above standard, or below? That is the question which is being asked to-day in hundreds of cities, towns and county-seats all over the United States. And these cities and towns are going to find out. They are going to hold Better Babies contests to determine, scientifically, just where their babies stand. They will find out by using the same methods employed to learn the standing of horses, cattle and hogs. And in every city and town the WOMAN'S HOME COMPANION

is going to help. Can it help your county—your farming district?

Do you want to know how healthy the babies in your county are? A Better Babies contest, held this summer or fall, will give you the answer, and you can be sure of this: However high your county babies score this year, they will score higher next year. This, of course, is what a Better Babies contest is for—to show *each baby's parents how to make that baby better*. If you have a baby on your farm, if you are a property-owner in your county, you owe it to yourself to see that a Better Babies contest is held in your neighborhood. And it is so easily done.

How to help your county's babies

FIRST, you want to get some organization in your county interested. This may be your grange, or your county medical society, or your parent-teacher association, or the ladies' aid society of your own church. If you are a "home body" and do not want to put yourself forward, or you are short of "hands" and busy, all you have to do is to speak a few earnest words at a meeting or write a letter to some public-spirited organization, and those who have more time and opportunity will push the movement and plan the contest. The doctors, the teachers, the stock-breeders, of your county will understand why the Better Babies idea is an important scientific discovery—more important than many discoveries of cures for disease, for it will greatly lessen disease.

Your county fair should certainly hold a Better Babies contest this fall. County fairs all over the United States are going to hold them, and the

WOMAN'S HOME COMPANION offers special prizes to county fair contests, but do not wait for the county fair—get the movement started in your community right away.

The WOMAN'S HOME COMPANION stands ready to prove this to your county. We will send the COMPANION'S Better Babies articles to anyone whose name you suggest. All you have to do is to drop a postal card, with the name and your request, to the Better Babies Bureau. Or we will, if you wish, suggest a letter for you to write to your county newspaper or any organization you think might arrange the contest. Then we will send to this organization our instructions for holding a contest, supply the Better Babies standard score-cards, literature and samples of blanks needed to carry on the good work. You will find that physicians of your county will be keenly interested and in all probability take charge of the contest, once it is started.

For further information, write to the *Better Babies Bureau*
WOMAN'S HOME COMPANION, Springfield, Ohio

Collar and Cuffs of Irish Lace

With Directions by Evaline Holbrook

EACH day low-neck effects with flat collars become more and more popular, and deservedly so, for no other neck dressing is so generally becoming. The collar illustrated belongs to this class. It is flat, with long ends for the slightly V front, and the straight cuffs are suitable both for full or elbow length sleeves. No. 70 crochet-cotton and a fine steel hook are used for the set. The work is exceedingly simple, including but two motifs: the rose motif with which so many are familiar, and a simple shamrock motif for the edge.

Begin the rose as follows: *Chain seven, catch in the fifth chain from the needle for a picot, and repeat from * until a string of six picots has been made. After the last picot catch in the first chain made, to form the center ring for the rose.

First Row—Chain six and make one double crochet in the space after the first picot of ring. *Chain three, one double crochet in space after next picot, and repeat from * until six double crochets are made, counting the starting chain as one double crochet. After the last double crochet chain three and catch in the third stitch of the starting chain.

Second Round—Make one single crochet and six double crochet in each hole of preceding row.

Third Round—Make one single crochet in each double crochet of first round, and seven chain between the double crochets, working behind the second round.

Fourth Round—Work one single crochet and fifteen double crochet in each space of preceding round. Join at the end of the round, thus completing the rose proper.

Working the Picot Filling

The filling around the rose is now to be made, as follows: Chain seven and catch in the fifth chain from the needle for a picot, chain eight and catch for a picot, chain two, catch in the third double crochet of the first petal of preceding round. Make another loop with two picots and catch in the third double crochet from the end of same petal, and work all around the rose in this way, catching twice in each petal. Catch the final loop of the round in the center of the first loop.

Second Round—Chain seven, catch in the next loop of preceding round before the first picot. Turn, over the seven chain just made work nine single crochets. Turn, chain two, one double crochet in each single crochet, picked up on the back thread. Chain seven and catch for a picot, chain two, catch in the center of same loop in which the seven chain was caught, make two loops with two picots each, catching in the center of the next two loops of preceding round. Then repeat from the beginning to the end of the round. The final loop of the round should be caught down in the center of the final loop of first round.

Third Round—Chain seven and catch for a picot, chain two, catch in the first stitch of shell, make two loops with two picots each, catching in the center and at the end of the shell, make two loops with two picots each along the row, then repeat from the beginning to the end of the row. Make two loops after the final shell.

Fourth Round—Make two loops with two picots each, as usual, catching the first in the space after the picot of small loop of preceding row. Chain seven, catch in the next loop before the picot, turn and make a shell, chain seven and catch for a picot, chain two, catch in center of same loop in which seven chain was caught, make two loops along the row, and repeat from the beginning to the end. Make one round all picot loops,

making two loops over each shell of preceding round as before, and fasten off.

Shamrock Medallions

For the shamrock medallions around the edges a padding-thread is used. No. 20 crochet-cotton is taken for this.

Work in single crochet one and one-half inches of the padding-thread alone, taking a double strand of the latter and working enough single crochet upon it to make a big loop of the work. For the first petal of the first shamrock now work (still over the padding alone) one single crochet, two double crochets, eighteen treble crochets, two double crochets, one single crochet. Draw up the padding



Collar and cuffs of the Rose and Shamrock Motifs

beneath these stitches and catch to the first of the petal stitches. Make two petals more in the same way and catch the last stitch of the last petal to the first stitch of the first.

Work eighteen single crochets over the padding alone, and draw the latter to a tiny ring beneath the stitches. Then make one single crochet over padding in each stitch along one half an inch of the big loop, picking up the stitches on the back thread. Turn the padding sharply and over it alone work in single crochet for a length of one inch, giving this part a slight, inward curve. At the end make a shamrock as before, and work in single crochet over padding along the stem, to the stitch with which work was started. Catch in center stitch of first petal made in first shamrock and fasten off.

Make ten rose medallions, and cut a stiff paper pattern of the correct size and shape for the collar. Baste the medallions in position down upon it, and join them by working rows of picot loops between them.

Make enough shamrocks for the edge of the collar, fasten them in place and join them and fill in all the spaces with the picot filling.

Now work along the neck edge of the collar as follows: Make one single crochet in center of each loop, and between the loops chain enough to keep work flat.

Second Row—Make one double crochet in every third stitch of preceding row, two chain between.

Third Row—*Three single crochets in first hole, one single crochet in next, chain three, one single crochet in same hole, and repeat from * to the end of the row. Fasten off and remove from pattern.

The cuffs are made in the same way as the collar.

If the needlewoman has no desire to make a collar-and-cuff set, but wishes to crochet a straight banding of Irish lace, either for edging or insertion, she can find nothing prettier than this pattern of simple rose and shamrock motifs. The shamrock edge, so easily worked, is most unusual, and if a narrower edging than the whole pattern is desired, the roses might be omitted and only the shamrocks used, with enough inner rows of the picot loop filling to give the needed width of lace.

For a Child's Set

This pattern also may be used for a child's coat set, but for this purpose the stems of the shamrocks should be omitted. Using the trefoils alone gives an odd effect to the edge, one that is very delicate and very appropriate for children's garments. For a child the collar may be made like that illustrated, but the cuffs should have rounded ends, matching those of the collar. If a sailor collar is preferable to a round collar, enough rose medallions should be made to cover the back, row after row.

In giving the size of the cotton used for the work, ordinary crochet-cotton is intended. If Irish crochet-cotton is used, No. 60 is quite fine enough for this set.



Detail showing the Rose and Shamrock Motifs

Cousin Sally's Girls and Boys

A Page for Young Folks

A Workaday Chat With Cousin Sally

DEAR COUSINS — "Afterawhile" and "To-morrow" are the last chums I want any of the cousins to have. Even in the languid summer days they should be shunned, for they are companions who sap instead of building up.

Now is the time of the year when we ought to be practical, not dreamy or—No, I will not write "lazy," for I am sure no cousin could or would be that. I simply want to bring before your mind that there are other things as interesting as napping in a hammock if you're a girl; or, if you're a boy, lying on the grass in the shade watching the fleecy clouds until you're caught into fast-asleep-land.

Be a help to Mother so that she can have the same chance for resting that you have. Let Father see he has a son who is interested in the farm. Keep so wide awake that nothing escapes you.

Help yourself by learning the how and why and when of farm life. There is nothing more interesting or that will more generously help you to become the successful man or gracious, capable lady.

A boy chum of mine named Allan has his summer all mapped out. He was telling me about it a while back, and when I said, "But aren't you going to nap any until fall?" his voice almost equaled a vigorous thump on a table when he said, "Time to loll when crops are all in!" I said no more, but I am sure, considering that turnips follow the summer crop he's most interested in, that Allan intends hustling until frost shakes down the nuts, and even then he will be harvesting for the family feast upon walnuts, hickory-nuts and butternuts the winter through.

Allan will work and have a jolly time too, for he tells me the "Jolly Grew" are going to have some dandy times. Jaunts and fishing trips to the creek, with home lunches scorned in favor of bacon roasted over a fire and eggs and potatoes toasted in hot ashes.

All the work and play, much better than luxurious ease under an apple-tree or up in the haymow.

Another chum, Minnie, is going to be Mother's aid. I have reason for believing the butter will be even nicer than of yore, and the eggs fresher. (Minnie is not going to forget egg-gathering once, nor slight a single nook big enough to hold a nest.)

Summer can and should be a growing time for boys and girls as well as crops. If crops didn't grow harvest-time would be a dreary season; and if the cousins should cease striving they would not be able to gather the crop of "castles" which working, added to dreaming, builds. Lovingly, COUSIN SALLY.

From Cousin Sally's Letter-Box

DEAR COUSIN SALLY—I received the button, as I said before. Your letter certainly pleased me. It rained this morning. I nearly got caught in a rain, and the roads are very muddy. I think we are going to have a picnic at our school the twenty-third of May. I will tell you all about it when it is over. School lets out the twenty-third because we had no spring vacation. We thought it best to have school when it was cooler and be out when it's so awful warm. I thought you were flooded out in Ohio, but I see it hasn't found you yet. I hope you and the other members are well. I will make a story and you can put it on the "Boys' and Girls' Page."

I remain your loving cousin,
FLOY DOWNEY, Age 12,
Box 46, R. D. 2, Whitewater, Wisconsin.

DEAR COUSIN SALLY—I like to read the children's page in the FARM AND FIRESIDE. I am a little girl eleven years old. I do chores and help Mama with the housework. We have a large sugar-bush. We tapped about four hundred buckets. I have four calves, two kittens and two bantams that I feed. I hope this letter will be put in print.

Your cousin,
LOIS BLOWERS,
Sanford, New York.

DEAR COUSIN SALLY—I received your kind letter, and I am sending you the five cents for the rules and Club button. Also, I am going to be a member of your club. I am now going to tell you how I help Mama with the housework. I wash dishes and wipe them, and I can cook and bake cakes and pies. One night

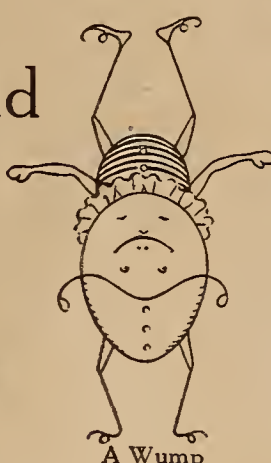


A Whizzle

The Whizzles and the Wumps

By Pauline Frances Camp

THEY'RE funny little creatures,
Are the Whizzles and the Wumps;
They do not like to be alone,
But go about in clumps.
The Whizzles are all curlicued,
And every querk turns up,
Just like the wiggly-waggly tail
Of any little pup.
But the Wumps are just the other way,
Their querkies downward go;
And they are scary little things,
As by and by you'll know.



A Wump

The Whizzles and Wumps go to school.
You think that's very queer?
They'd never have vacation if
There was no school, my dear!
Their lessons are not quite like yours,
As you may well suppose.
They learn to curl their kinks and querkles
And hop upon their toes.
And when a Wump has learned the trick
Of standing on his head
He never is a Wump again,
A Whizzle, he, instead.

And now vacation-time has come,
They skip about and play.
At least, the Whizzles do; the Wumps
Are nothing like so gay.
They play at marbles, hoop and ball
(Those of the Wumps are square).
"Because they cannot roll so far,"
They sigh, with plaintive air.

The Whizzles make them mighty stilts,
That lift them way up high,
And whiz about with shouts of glee.
The Wumps are not so spry.
They make their stilts close to the ground,
The step two inches tall;
They think that it is safer and
'Tis not so far to fall.

The other day the Whizzles went
A-swimming in the lake,
And all the little Wumps began
To shiver and to shake.

The Whizzles dived and squirmed like eels,
Each gave the other chase,
They rode upon the fishes' backs,
Had many a jolly race.
"Come in, the water's fine," they called;
The Wumps shook harder yet.
"We do not dare," they shrilly squeaked,
"We fear we might get wet."



So when the Whizzles capered home,
All rosy, warm and pink,
They left the Wumps, with chattering teeth,
Still sitting on the brink.



I cooked supper by myself for Papa and Mama. I will close for this time.
Yours truly,
IDA L. COX,
Alva, Oklahoma.

DEAR COUSIN SALLY—It has been a long time since I last wrote to you. I enjoy reading your page as much as ever. I am in my eighteenth year and find plenty of work on the farm to keep me in good health and spirits.

Yours sincerely as ever,
CHARLES TANNER,
Pleasant Valley, New York.

One of our used-to-be-cousins, now barred from being an active member because he is a man, is still interested in us, as his letter shows. One of the pithy sentences he wrote me is, "A man's character will never rise higher than his aims." Charles has grown into a strong, healthy man and is one of the cousins who will always grow mentally, for he sees the opportunities about him and is not afraid of the work always needed to change the "possible" into the "real."

DEAR COUSIN SALLY—I hope all the cousins are well and happy. Do you ever give prizes of dolls? I have two little dolls and one big one. I have had the big one nearly two years.

Do city people take FARM AND FIRESIDE? I like it very much. Do you like to live in the city or in the country? I like the country best. Your cousin,
RUTH HOGE.

Riddles for Girls and Boys

Of three stripes I can make the number thirty by adding three other stripes.
Answer: By crossing the three stripes with three other stripes: XXX.

Guessing a number. Think of a number. Add the same. Then add 8. Now divide it into two. Subtract the number imagined. There remains 4.

Answer: He has, for instance, thought of the number 10. He adds the same number. Then he has 20. He adds 8. Then he has 28. He divides it into two. Then he has 14. He subtracts number imagined. There remains 14—10=4.

The trick is very simple. There always remains half of the number added. Of the number imagined nothing remains: it has first been doubled, and then half of it has been subtracted, and finally the number imagined is ordered to be subtracted. So there remains nothing of it: 10+10=20, half of 20=10, 10—10=0.

Who has first four feet, then two and finally three?

Answer: A man; first, as a baby, he creeps, then he stands erect, and in old age he uses a cane.

Ten guests get ten eggs. Each is to have one, and yet one egg is to remain in the dish.

Answer: One of the guests takes the dish with the egg, so that egg remains in the dish.



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Points for Young Pitchers

By Chelsea Curtis Fraser

MOST boys, when they join a baseball club, want to be pitcher. They never stop seriously to consider whether or not they can do the exacting work that important office of a team demands better than some other boy of the nine, but let their ambitions run away with them, and all clamor to be pitchers.

To all such boys, with an earnest desire to occupy the pitcher's box, I wish to say: The position is a good one; it is full of honor for the boy who succeeds in it; but if you have never before pitched in a game and do not know for sure that you have good control, good speed, good endurance, good curves, and a good head in a tight place, before you importune your captain for a place on his pitching staff, do enough private practising to make sure in your own mind that you have at least the control, speed, curves and endurance. This can be done quite conclusively, and if you are successful in the matter of these four elements, you have a strong chance of making good as a pitcher, and can test out your head work in actual play.

Head work is an essential, however. Without coolness in times of peril, such as when a batsman is on the point of "walking," when the bases are full and a heavy hitter up to bat, when your teammates seem all going to pieces and making errors galore,—without the ability to preserve your composure perfectly unruffled, you will not succeed as a pitcher. Then, too, you must be sagacious as well as cool; you must learn quickly the batting abilities and batting weaknesses of the men who stand up before you; learn just where a thrown ball will be in the most awkward place for them to strike it—and put it there not less than three times out of four attempts!



But now we are getting into control. That is one of the four requisites of a good pitcher which you are to secure in your private practice, before you embarrass your captain by your application, or imperil the interests of your team by trying your hand at pitching without any excuse for it.

Practise in the back yard, alley, anywhere that will afford you sufficient space and proper seclusion. It is best to have a companion to catch and return your balls, but you can work alone, as many of the greatest pitchers have done under similar conditions, by placing your representation of home-plate about five feet in front of a wall or building. The latter will act as a backstop, and if of stone or brick will generally rebound the ball to you.

The home-plate may be a piece of white paper, weighted by a brick or stone, or a block of wood painted white or faced with paper or cardboard tacked upon it. It should be the regulation size, fifteen inches square.

The regulation distance for the pitcher's box from the home-plate is sixty and one-half feet, but boys between the ages of ten and thirteen should shorten this distance to forty-five feet. Therefore set the practice pitcher's box a distance to correspond to this from the practice home-plate, as conditions in this respect must be the same as in an actual game. With a stick, scratch a rectangle in the ground whose dimensions are six by twenty-four inches, as the pitcher's box.

Standing within this box, attempts should be made to throw straight balls directly over the base. See that they not only go over it, but that they travel no lower than a batsman's knees, nor higher than his shoulders; that is, within the strike zone. A stick stuck into the ground close to the base, with two rags tied

thereto at these distances will help you to gage the balls for height.

When you can control the straight ball at moderate speed, get the same control with slow speed, then full speed. A slow ball, after an extremely fast one, often fools a batsman completely, and he strikes long before it reaches him and vice versa. Next practise cutting the inner and outer corners of the plate at will with the fast balls.

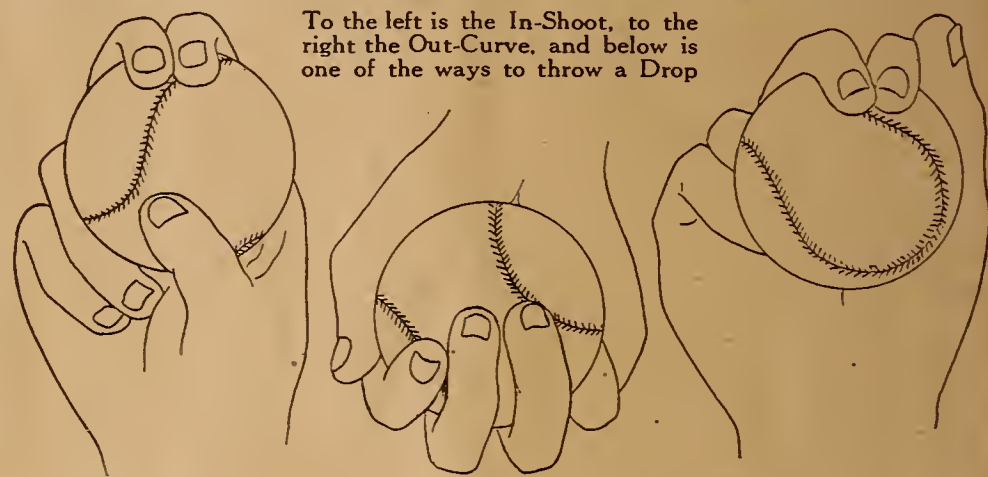
Your control will never be perfect; you'll be working to better it, as long as you're a pitcher; but the degree of accuracy to which you can bring it in a short time is far higher than you suppose. And you *must* have it.

The Spit-Ball

The vagaries of the so called spit-ball are supposed to result from the fact that it is thrown with no spin at all. That is why a part of the ball is wetted. If you wish to try to learn this, practise with a clean ball on which you have painted a black spot, to show you when you are throwing it without twirling. The first requisite in throwing a spit-ball is speed.

Out-Curve

The batsman sees the pitcher hold this curve in the way illustrated. The ball is



To the left is the In-Shoot, to the right the Out-Curve, and below is one of the ways to throw a Drop

the other way, with its palm toward you, and the ball goes out along the side of the forefinger. Many pitchers grip the ball with the end of the thumb also, and give a part of the twist with that. An out-curve may be thrown underhand, with a bit of rise on it, and with speed and control it is very effective, a hard ball to place.

The Drop

This diagram shows how the batsman might view the ball as the pitcher is about to release it. As a matter of fact, however, no good pitcher will give a batsman time to realize how he is holding the ball for any throw, as he wishes to surprise him, and batsmen are often pitchers or acquainted with the practices of the art. The out-drop is gripped very tightly by the first three fingers and base of the retracted thumb. It is cast straight overhand, and rolls over the tips of the three fingers mentioned. It travels apparently straight, but suddenly pitches downward just before reaching the plate.

In-Shoot

The illustration is a straight front view of this curve, as a batsman would see the ball held by the pitcher facing him. The ball is gripped firmly in the

gripped tightly in much the same manner as in pitching the in-shoot, except that the third and fourth fingers are placed further under the ball, and the thumb back of it. The fleshy part, or base, of the thumb, and the two encircling fingers do the entire gripping. The throw is made partly overhand, as in the former case, but at delivery the hand is turned

manner shown, and thrown almost directly overhand. While the hand is still at an upward angle before the body, the thumb of the hand is given a slight turn toward the batsman, so as to project the ball on its way off the further side of the second finger. The ball curves in toward the batsman, and must be thrown to the left of the plate to get it over.

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Warm Days
Designs by Grace Margaret Gould



No. 1945—Dressing-Sacque with Round Collar

32 to 44 bust. Material required for 36-inch bust, five and one-half yards of twenty-two-inch material, or three yards of thirty-six-inch material. This pattern, ten cents

No. 1906—Room Gown with Large Collar

32, 36, 40 and 44 bust. Material for 36-inch bust, seven and five-eighths yards of twenty-seven-inch material, or four and one-eighth yards of forty-four-inch material. Price of this pattern, ten cents

EVERY woman who is busy in the summer will be interested in the practical clothes shown on this page. They are all suited to warm weather wear, and all of them are the kind that slip on and off in the quickest way. The designs Nos. 2284 and 2180, which are appropriate for any wash materials, are of special interest. They have all the quickly-put-on and comfortable features of a wrapper and the dainty trim effect of a dress for summer days.



No. 1906



No. 2182—Princesse Work Apron: Large Armholes

32 to 44 inch bust. Quantity of material required for medium size or 36-inch bust, five yards of thirty-six-inch material. Price of this pattern, ten cents



No. 2298



No. 1910—Belted Dressing-Sacque

32 to 44 bust. Material for medium size, three and three-fourths yards of twenty-seven-inch material, or two and one-fourth yards of thirty-six-inch material. The price of pattern is ten cents

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32, 36, 40 and 44 bust. Material for 36-inch bust, five and one-half yards of twenty-seven-inch material, or three and three-fourths yards of thirty-six-inch material. The price of pattern is ten cents

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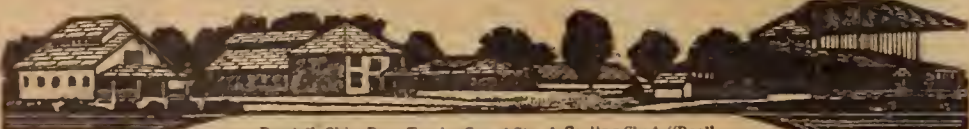
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When Strawberries are Ripe

Recipes for the
First Fruit of
the Season



Strawberry Cream

Tested and Con-
tributed by Our
Readers

Strawberry Puffs—Mix well one pint of flour, two level teaspoonfuls of baking-powder and a little salt. Make into a soft dough with milk, using about one cupful. Put a spoonful of the dough into well-greased cups, then a spoonful of strawberries, then another of dough. Steam for twenty minutes. Turn out on a platter, and serve with strawberry sauce, prepared as follows:

Strawberry Sauce—Cream two table-spoonfuls of butter, add gradually one cupful of powdered sugar and a little lemon-juice. Beat in as many crushed berries as mixture will hold, and serve cold, or melt over hot water, and serve hot.

Strawberry Charlotte Russe—Make a light sponge-cake, and bake in a tin with a center tube. Cool the cake, and remove most of the center, leaving a shell. Fill in with sweetened berries, and add sweetened whipped cream to the top, scattering a few large berries over the cream. Serve in pointed pieces.

Strawberry Pie—Line a deep pie-plate with pie-crust and prick in several places. Bake to a delicate brown. Fill the shell with crushed sweetened berries, and spread with whipped cream. Or place one quart of sweetened berries in a deep baking-dish, cover with a sheet of rich pie-crust, and bake.

Strawberry Ice—Whip the whites of three eggs with three tablespoonfuls of sugar. Crush two quarts of hulled berries with one pound of granulated sugar, and let stand one hour. Strain, and flavor with lemon-juice. Soak one table-spoonful of gelatin in cold water, and dissolve with a little hot water. Cool, and add to the berry syrup. Place in a freezer, and when partly frozen beat in the egg whip, and freeze stiff. H. A. S.

Delicious Strawberry Shortcake—Four cupfuls of sifted flour, three heaping teaspoonfuls of baking-powder, one teaspoonful of salt, one teaspoonful of

Strawberry Jelly—Soak one-half box of gelatin in enough cold water to cover it until soft. Add one-half cupful of boiling water. Crush one quart of strawberries, and strain out the juice. Add to it one cupful of sugar and the juice of one lemon. Add this syrup to the hot gelatin. Strain through a flannel bag, and mold in a porcelain dish. Serve with whipped cream. Or mold in a deep dish with cylinder in center. When cold unmold, and fill center with sweetened whipped cream.

Strawberry-and-Pineapple Salad—Put strawberries in a salad dish with alternate slices of fresh or canned pineapple. Pour over the mixture the strained juice of two lemons or two oranges. Keep on ice until ready to serve as a dessert with sponge-cake and whipped cream.

Strawberry Cream Biscuits—Make a rich biscuit-dough, and bake in gem-pans until light and delicately browned. Cut a circle from the top of each, remove the soft interior, and fill the centers with sliced strawberries and whipped cream. Top each biscuit with one of the tiny crust circles and serve at once. M. H. N.

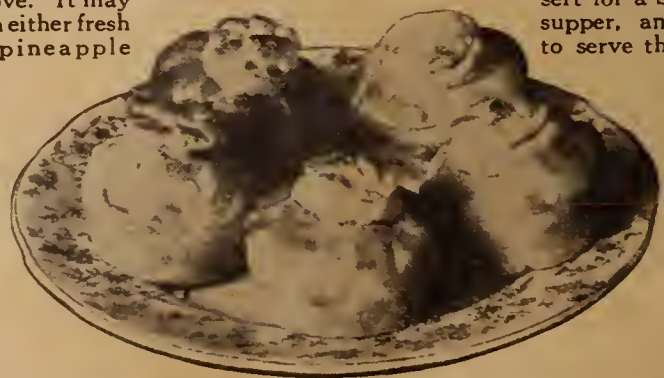
Strawberry Cream—Whip one cupful of thick cream. Cut one pint of berries into bits with a silver knife. Stir them lightly into the cream. Soak one table-spoonful of gelatin in one-fourth cupful of cold water. Dissolve in one-fourth cupful of boiling water. When slightly cooled add to the berries and cream, with three tablespoonfuls of powdered sugar. When it begins to thicken pour in a wet mold, and harden.

Strawberry Meringue—Place in a large bowl two cupfuls of hulled berries and half a cupful of white sugar, and shake them about until the berries are well sugared; then spread them over a thin, sweet cake baked in a square jelly-tin. Fit a strip of paper around the cake, and fasten with a pin. Make a meringue with the whites of three eggs and a cup-



Strawberry-and-Pineapple Salad, with whipped cream, is pictured in the dish above. It may be made with either fresh or canned pineapple

Strawberry Cream Biscuits, in the lower dish, make an attractive dessert for a Sunday night supper, and are easier to serve than shortcake



butter, one teaspoonful of lard and enough sweet milk to make a soft dough. Remove the hulls from two quarts of strawberries, and sprinkle them with a generous amount of granulated sugar, enough to make a quantity of syrup, and let them stand for half an hour. Sift the salt, flour and baking-powder together, rub in the shortening, and then with a fork stir in lightly and quickly the milk, making a dough that is too soft to be rolled. Turn this into two greased tins, and bake a light brown in a quick oven, testing with a straw to see when done. Butter the layers, and spread the first with strawberries, pouring over a part of the juice. Place on top of this the next layer, the rest of the berries and juice, set in the oven a few moments, and serve hot, with a pitcher of sweet cream. E. C. H.

ful of powdered sugar, spread it over the berries on the cake, and set in a quick oven to brown. E. I. L.

To Can Strawberries, put over them a syrup made of granulated sugar, heat the berries enough to shrink them, warm and fill the jars, put on the rubbers and covers and place in a boiler of hot water on the stove, with a little straw under and between the jars. Boil for a few minutes, remove from stove, and when the jars are cold tighten caps and store in a dark cellar. J. D. R.

Strawberry Ice-Cream—Mash one quart of berries, and beat with one and one-fourth pounds of sugar. Stir until the sugar is dissolved, then add slowly one pint of new milk and one quart of whipped cream. Mix and freeze. E. I. L.